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Rules, Regulations, Orders

TITLE 7—AGRICULTURE

CHAPTER VII—AGRICULTURAL ADJUSTMENT ADMINISTRATION

PART 724—BURLEY TOBACCO

MARKETING QUOTA REGULATIONS 1940-41 MARKETING YEAR, AMENDMENT

Marketing Quota Regulations, Burley Tobacco—1940-41 Marketing Year¹ are hereby amended as follows:

Section 724.234 *Amount of farm marketing quota.* Is amended by adding at the end thereof the following:

The marketing quota for any farm having tobacco carried over from a crop produced prior to the calendar year 1940, shall be whichever of the following is applicable:

(1) If the harvested acreage of tobacco in the year in which the carry-over tobacco was produced is not greater than the acreage allotment for such year and the acreage of tobacco harvested on the farm in 1940 is not greater than the acreage allotment for such year, the marketing quota shall be the actual production of tobacco on the farm acreage allotment for 1940 plus the amount of the carry-over tobacco.

(2) If the acreage of tobacco harvested on the farm in the year in which the carry-over tobacco was produced is greater than the acreage allotment for such year and the acreage of tobacco harvested on the farm in 1940 is less than the acreage allotment for 1940 by as much as the number of acres obtained by dividing into the carry-over tobacco the normal yield for the farm, the farm marketing quota shall be the actual production on the farm in 1940 plus the amount of the carry-over tobacco.

(3) If the acreage of tobacco harvested on the farm in the year in which the carry-over tobacco was produced is greater than the acreage allotment for such year and the acreage of tobacco harvested on the farm in 1940 does not ex-

ceed the 1940 acreage allotment but is not less than such acreage allotment by as much as the number of acres obtained by dividing into the total pounds of carry-over tobacco the normal yield for the farm, the farm marketing quota shall be the actual production of tobacco on the farm in 1940.

(4) If the harvested acreage of tobacco in the year in which the carry-over tobacco was produced is greater than the acreage allotment for such year and the acreage of tobacco harvested on the farm in 1940 is greater than the acreage allotment for such year, the marketing quota shall be the actual production of tobacco on the farm acreage allotment for 1940.

(5) If the harvested acreage of tobacco in the year in which the carry-over tobacco was produced is not greater than the acreage allotment for such year but the acreage of tobacco harvested on the farm in 1940 is in excess of the acreage allotment for such year, the marketing quota shall be the actual production of tobacco on the farm acreage allotment for 1940, plus the amount of carry-over tobacco.

Excess tobacco in the case of farms having tobacco carried over from the calendar year prior to 1940 shall be all tobacco available for marketing from the farm in excess of the farm marketing quota determined as provided under paragraph (3), (4) or (5) above.

Section 724.235 *Issuance of marketing card* is amended by adding at the end thereof the following:

(d) *Issuance of marketing cards for farms having carry-over tobacco.* (1) For any farm on which the marketing quota is that amount determined pursuant to paragraph (1) or (2) of § 724.234 above, there shall be issued a within quota marketing card, unless the farm is operated by a person who also operates another farm on which there is tobacco available for marketing in excess of the farm marketing quota, in which event there shall be issued an excess marketing card.

(2) For any farm on which the farm marketing quota is that amount de-

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¹ 5 F.R. 4359.



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terminated pursuant to paragraph (3), (4), or (5) of § 724.234 above, there shall be issued an excess marketing card.

The percent excess for any farm for which paragraphs (3) and (4) of § 724.234 are applicable shall be computed as follows: (i) A number of acres shall be determined by dividing into the carry-over tobacco the 1940 normal yield per acre for the farm; (ii) the number of acres determined under (i) shall be added to the 1940 harvested acreage; (iii) there shall be subtracted from the acreage determined under (ii) the 1940 acreage allotment; and (iv) the result obtained under (iii) shall be divided by the acreage determined under (ii).

The percent excess for any farm for which paragraph (5) of § 724.234 is applicable shall be computed as follows: (i) A number of acres shall be determined by dividing into the carry-over tobacco the 1940 normal yield per acre for the farm; (ii) the number of acres under (i) shall be added to the 1940 harvested acreage; (iii) the number of acres determined under (i) shall be added to the 1940 acreage allotment; (iv) there shall be subtracted from the acreage determined under (ii) the acreage determined under (iii) above; (v) the result obtained under (iv) shall be divided by the acreage determined under (ii).

Section 724.238 *Rights of producers in marketing card* is amended by adding at the end thereof the following:

The rights of producers in the marketing card for a farm having tobacco carried over from a crop produced prior to 1940 shall be determined in accordance

with the provisions of this section, except that the burden of any penalty with respect to any such carry-over tobacco shall be borne by those persons having an interest in such tobacco.

Done at Washington, D. C., this 12th day of December 1940. Witness my hand and the seal of the Department of Agriculture.

CLAUDE R. WICKARD,
Secretary of Agriculture.

[F. R. Doc. 40-5550; Filed, December 12, 1940; 11:13 a. m.]

CHAPTER IX¹—SURPLUS MARKETING ADMINISTRATION

[Amendment 1, Order 27, As Amended:]

PART 927—MILK IN NEW YORK METROPOLITAN MARKETING AREA

AMENDMENT TO THE ORDER, AS AMENDED, REGULATING THE HANDLING OF MILK²

Whereas the Secretary of Agriculture of the United States of America, pursuant to the powers conferred upon the Secretary by Public Act No. 10, 73d Congress, as amended and as reenacted and amended by the Agricultural Marketing Agreement Act of 1937, issued, on March 30, 1940, and, on April 25, 1940, made effective, as of May 1, 1940, the order, as amended, regulating the handling of milk in the New York metropolitan milk marketing area; and

Whereas the Secretary, having reason to believe that amendments to said order, as amended, would tend to effectuate the declared policy of the act, gave, on the 20th day of September 1940, notice of a hearing which was held on October 7 and 8 at New York City, on October 9 and 10 at Syracuse, New York, on October 11 at Albany, New York, and on October 15 and 16 at New York City, and, at said times and places, conducted a public hearing at which all interested parties were afforded an opportunity to be heard on proposed amendments to said order, as amended; and

Whereas the Secretary of Agriculture finds (§ 927.0), upon the evidence introduced at said hearing on such proposed amendments, said findings being in addition to the findings made upon the evidence introduced at the hearing on said order, as amended, and to the other findings made prior to or at the time of the original issuance of said order and at the time of the issuance of said order, as amended, (which findings are hereby ratified and affirmed, save only as such findings are in conflict with findings hereinafter set forth):

§ 927.0 *Findings.* (a) That prices calculated to give milk produced for sale

¹ 4 F. R. 3901.

² Amendments to §§ 927.0, 927.4, 927.6, and 927.7, issued under the authority contained in 48 Stat. 31 (1933); 7 U. S. C. 601 et seq. (1934); 49 Stat. 750 (1935); 50 Stat. 246 (1937); 7 U. S. C. 601 et seq. (Supp. IV, 1938).

in the marketing area a purchasing power equivalent to the purchasing power of such milk, as determined pursuant to section 2 and section 8e of the act, are not reasonable in view of the available supplies of feeds, the price of feeds, and other economic conditions which affect the supply of and demand for such milk and that the minimum prices set forth in this amendment to said order are such prices as will reflect the aforesaid factors, insure a sufficient quantity of pure and wholesome milk, and be in the public interest; and that the fixing of such prices does not have for its purpose the maintenance of prices to producers above the levels which are declared in the act to be the policy of Congress to establish;

(b) That the order, as amended, as herewith amended, regulates the handling of milk in the same manner as a marketing agreement upon which a hearing has been held; and

(c) That the issuance of this amendment to the order, as amended, and all of the terms and conditions of the order, as amended, as herewith amended, will tend to effectuate the declared policy of the act.

Now, therefore the Secretary of Agriculture, pursuant to the powers conferred upon him by Public Act No. 10, 73d Congress, as amended and as reenacted and amended by the Agricultural Marketing Agreement Act of 1937, hereby orders that the order, as amended, regulating the handling of milk in the New York metropolitan marketing area be and it is hereby amended as follows:

A. Delete § 927.4 (a) (3) and insert in place thereof the following:

(3) For Class I milk the price per hundredweight during each month shall be, except as specified in subparagraphs (4) and (5) of this paragraph, the prices set forth in the table in this subparagraph but not less than \$2.45 per hundredweight, during the month of April 1941.

92-score butter, wholesale, at New York, average announced pursuant to § 927.2 (e)	Class I price	
	April through July	August through March
Cents per pound	Dollars per cwt.	Dollars per cwt.
Under 25.....	2.00	2.25
25 or over, but under 30.....	2.20	2.45
30 or over, but under 35.....	2.20	2.65
35 or over, but under 40.....	2.40	2.65
40 or over, but under 45.....	2.60	2.85
45 and over.....	2.80	3.05

B. Delete § 927.4 (a) (5) and insert in place thereof the following:

(5) For Class I milk which has not passed through the marketing area but which is ultimately distributed in an area regulated by another order of the Secretary, the price shall be the same as

would be applicable to such milk under such other order. For Class I milk which has not passed through the marketing area, but including Class I milk which was received direct from producers at a plant in the marketing area, and which is ultimately distributed in an area not regulated by an order of the Secretary the price shall be 20 cents per hundredweight over the Class II-A price.

C. In § 927.4 (a) (11) delete the figure "11" and insert in place thereof the figure "13."

D. Delete § 927.4 (d), and insert in place thereof the following:

(d) *Skim milk adjustment.* The minimum prices for Classes II-A and IV-A milk shall include any plus adjustment which shall be computed by the market administrator as follows: From the average of all the hot roller process dry skim milk quotations for "other brands, animal feed, carlots, bags or barrels" and for "other brands, human consumption, carlots, bags, or barrels" (using midpoint of any range as one quotation), published during each month in "The Producers' Price-Current," subtract 4 cents, and multiply by 7.5.

E. Delete from § 927.6 (a) (4) the words "if not produced by such handler, and subtract from the total quantity of Class I milk the total quantity of outside Class I milk."

F. In § 927.7 (a) change the colon after word "section" to a period and delete the remainder of the sentence.

G. Delete § 927.7 (e) and insert in place thereof the following:

(e) *Payments to cooperative associations.* Any cooperative association of producers may apply to the Secretary for a determination of its qualifications to receive payments pursuant to this paragraph by reason of its having and exercising full authority in the sale of the milk of its members, using its best efforts to supply, in times of short supply, Class I milk to the marketing area and to secure utilization of milk, in times of long supply, in a manner to assure the greatest possible returns to all producers, and having its entire activities under the control of its members.

After the Secretary has determined any cooperative to be qualified to receive payments pursuant to this paragraph, such cooperative shall from time to time, as requested by the market administrator, make reports to the market administrator with respect to services rendered to the market and the use of the sums received under this paragraph. Whenever the market administrator has reason to believe that any cooperative qualified by the Secretary is failing to perform the obligations covered by the payments under this paragraph, he shall suspend and hold in reserve such payments, notifying the Secretary and the cooperative of his ac-

tion and the reasons therefor. Such suspended payments shall be held in reserve until the Secretary has, after hearing, disqualified such cooperative or ruled upon the performance of the cooperative and either ordered the suspended payments to be paid to the cooperative in whole or in part or disqualified the cooperative, in which event the balance of payments held in reserve shall be returned to the producer-settlement fund.

The market administrator shall make the payments authorized by this paragraph, or issue credit therefor, out of the producer-settlement fund on or before the 25th day of each month, subject to verification of the reports upon which such payment is based. Such payments shall be made to each cooperative association of producers under the following conditions and at the following rates:

(1) Three-quarters of one cent per hundredweight of net pooled milk at any handler's plant which was caused to be delivered from its members by such associations and on which such handler has made the reports and payments required by this order;

(2) Except as set forth in subparagraph (3) of this paragraph, two cents per hundredweight of net pooled milk at plants of other handlers which was reported and collected for by such association; and

(3) Four cents per hundredweight of net pooled milk at plants operated by such association and, if, in addition to the other qualifications, such association has been determined by the Secretary to have sufficient plant capacity to receive all the milk of producers who are members and to be willing and able to receive milk from producers not members, four cents per hundredweight of any net pooled milk which was caused by it to be delivered to any other handler and which is reported and collected for by such association.

H. Delete § 927.7 (f) and in place thereof insert the following:

(f) *Division Payments.* Any handler may make claim, on forms supplied by the market administrator, for payments out of the producer-settlement fund under the conditions set forth in this paragraph with respect to milk received from producers at a plant equipped only for the receiving and shipping of milk which was moved to a second plant outside of the marketing area and there separated into cream and skim milk or manufactured. The market administrator shall, after preliminary audit of such claim to check the actual movement of the milk and the proper classification thereof, make payment to such handler, subject to final audit, out of the producer-settlement fund, or issue credit against balances due by such handler to the pro-

ducer-settlement fund, at the following rates and under the following conditions:

(1) Payments may be made only on milk which has been, pursuant to Sec. 927.3, properly classified, for any month of the year, in Classes II-A, II-B, II-C, III-A, III-B, III-C, and III-D; for the months of January, February, March, April, September, and October, in Class IV-A; or, for the months of May, June, July, and August, in Class IV-B.

(2) No claim shall be allowed if the milk on which the claim is made is manufactured at a second plant from which, within 24 hours prior to, or 48 hours after, the calendar day during which such milk was received at the second plant, Class I milk was shipped to the marketing area, or if the second plant is less than one-half mile from the first plant.

(3) Claims shall be paid at a rate for handling through the receiving plant of 17 cents per hundredweight, plus a hauling allowance at the rate of $\frac{1}{4}$ cent per hundredweight per mile for 20 miles and $\frac{1}{10}$ cent per hundredweight per additional mile for the shortest highway distance between the two plants: *Provided, however,* That no claim for a hauling allowance shall be paid for a haul greater than 65 miles.

(4) The market administrator shall determine, in the manner prescribed by § 927.4 (c), a freight zone for each plant on movement of milk to which claim is made by a handler. If the zone of the plant, on movement of milk to which claim is made, is nearer to or farther from New York City than the zone of the plant from which the movement was made, the rate of the claim otherwise payable shall be reduced or increased, as the case may be, by the difference between the price applicable to the class at the first plant and the price which would be applicable at the second plant if the milk had been received there from producers.

(5) The market administrator shall from time to time cause inspections to be made of the buildings, facilities, and surroundings of plants and notify handlers of his determination as to what constitutes the plant and its equipment for the purposes of this § 927.7 (f). Such determination shall be ruling for all other purposes under this order.

In witness whereof, I, Claude R. Wickard, Secretary of Agriculture of the United States, have executed, in duplicate, and issued this order, to become effective at such time as I may subsequently declare, and caused the official seal of the Department of Agriculture to be affixed in the city of Washington, District of Columbia, this 9th day of December 1940

CLAUDE R. WICKARD,
Secretary of Agriculture.

[F. R. Doc. 40-5529; Filed, December 11, 1940; 12:20 p. m.]

TITLE 16—COMMERCIAL PRACTICES

CHAPTER I—FEDERAL TRADE COMMISSION

[Docket No. 4318]

PART 3—DIGEST OF CEASE AND DESIST ORDERS

IN THE MATTER OF THE LO-WELL PENCIL COMPANY, ETC.

§ 3.6 (j10) *Advertising falsely or misleadingly—History of product:* § 3.6 (u) *Advertising falsely or misleadingly—Quality:* § 3.6 (f10) *Advertising falsely or misleadingly—Unique nature or advantages.* Representing, in connection with offer, etc., in commerce, of pencils, carbon paper and various types of premiums, that pencils are of first quality unless such pencils are in fact of the kind and quality usually sold at retail as and known as 5¢ pencils, or that a line of pencils is new unless there are features about such pencils which distinguish them from pencils which have theretofore been sold by respondent, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, The Lo-Well Pencil Company, etc., Docket 4318, November 29, 1940]

§ 3.6 (a10) *Advertising falsely or misleadingly—Comparative data or merits:* § 3.6 (t) *Advertising falsely or misleadingly—Qualities or properties of product.* Representing, in connection with offer, etc., in commerce, of pencils, carbon paper and various types of premiums, that line of pencils is "better" unless such pencils are of a higher quality than those which have theretofore been sold by respondent, or that respondent's pencils will outwear ordinary pencils unless such pencils possess wearing qualities greater than those of pencils usually sold at retail as 5¢ pencils, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, The Lo-Well Pencil Company, etc., Docket 4318, November 29, 1940]

§ 3.6 (r) (7) *Advertising falsely or misleadingly—Prices—Usual as reduced.* Representing, in connection with offer, etc., in commerce, of pencils, carbon paper and various types of premiums, that pencils are being sold at reduced prices unless in fact they are being offered for sale at a price lower than those at which they are usually and customarily sold by respondent, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, The Lo-Well Pencil Company, etc., Docket 4318, November 29, 1940]

§ 3.6 (c) *Advertising falsely or misleadingly—Composition of goods:* § 3.6 (m10) *Advertising falsely or misleadingly—Manufacture or preparation:* § 3.6 (q) (1) *Advertising falsely or misleadingly—Premiums and prizes—*

Premiums: § 3.6 (u) *Advertising falsely or misleadingly—Quality:* § 3.6 (y5) *Advertising falsely or misleadingly—Sample, offer or order conformance:* § 3.72 (j) *Offering deceptive inducements to purchase—Premium or premium conditions:* § 3.72 (m10) *Offering deceptive inducements to purchase—Sample, offer or order conformance:* § 3.96 (a) (1) *Using misleading name—Goods—Composition:* § 3.96 (a) (3.5) *Using misleading name—Goods—Manufacture.* Representing, in connection with offer, etc., in commerce, of pencils, carbon paper and various types of premiums, that the quality, grade or material of respondent's products or of the various premiums offered by him are superior to or different from the actual quality, grade or material of such products or premiums, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, The Lo-Well Pencil Company, etc., Docket 4318, November 29, 1940]

In the Matter of James R. Kaye, an Individual Trading as The Lo-Well Pencil Company, and The Lo-Well Company

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 29th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission upon the complaint of the Commission and the answer of respondent, in which answer respondent admits all the material allegations of fact set forth in said complaint and states that he waives all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and conclusion that said respondent has violated the provisions of the Federal Trade Commission Act;

It is ordered, That the respondent James R. Kaye, individually and trading as The Lo-Well Pencil Company and The Lo-Well Company, his representatives, agents and employees, directly or through any corporate or other device in connection with the offering for sale, sale and distribution of pencils, carbon paper and various types of premiums in commerce as "commerce" is defined in the Federal Trade Commission Act do forthwith cease and desist from representing in any manner or by any means:

(1) That pencils are of first quality unless such pencils are in fact of the kind and quality usually sold at retail as and known as 5¢ pencils;

(2) That a line of pencils is new unless there are features about such pencils which distinguish them from pencils which have theretofore been sold by respondent;

(3) That line of pencils is "better" unless such pencils are of a higher quality than those which have theretofore been sold by respondent;

(4) That respondent's pencils will outwear ordinary pencils unless such pencils possess wearing qualities greater than those of pencils usually sold at retail as 5¢ pencils;

(5) That pencils are being sold at reduced prices unless in fact such pencils are being offered for sale at a price lower than the prices at which they are usually and customarily sold by respondent;

(6) That the quality, grade or material of his products or of the various premiums offered by him are superior to or different from the actual quality, grade or material of such products or premiums.

It is further ordered, That the respondent shall, within sixty (60) days after service upon him of this order, file with the Commission a report in writing, setting forth in detail the manner and form in which he has complied with this order. By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5558; Filed, December 12, 1940;
11:22 a. m.]

[Docket No. 4215]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF HOWARD E. JONES & CO.
ETC.

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with course and conduct of respondents' business of buying food products for their own account in commerce, and on the part of respondent individuals, doing business under various firm names and styles, as below set forth, and on the part of their agents, etc., (1) making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction, or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, of any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, Howard E. Jones & Co., etc., Docket 4215, November 30, 1940]

In the Matter of H. Stanley Jones, H. Edwin Jones, Maurice C. Berkeley, Copartners Doing Business Under the Firm Names and Styles of Howard E.

Jones & Co., King Foods Company, Baltimore Sales Service Company, Baltimore Macaroni Company, and Ocono Company

At a regular session of the Federal Trade Commission held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission upon the complaint of the Commission, and the answer of the respondents, in which answer said respondents admit all of the material allegations of facts set forth in said complaint, and waive all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the respondents have violated the provisions of section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13),

It is ordered, That in the course and conduct of their business of buying food products for their own account in commerce, the respondents, H. Stanley Jones, H. Edwin Jones and Maurice C. Berkeley, copartners doing business under the firm names and styles of Howard E. Jones & Co., King Foods Company, Baltimore Sales Service Company, Baltimore Macaroni Company, and Ocono Company, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction, or reduction, or is arrived at or computed by deducting, or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, of any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account.

It is further ordered, That the respondents named in the caption hereof shall, within thirty (30) days after service upon them of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5551; Filed, December 12, 1940;
11:19 a. m.]

15 F.R. 2777.

[Docket No. 4275]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF ALBERT W. SISK & SON

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondents in the capacities of field brokers, and in connection with the resale in interstate commerce of commodities purchased by respondents, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondents to corresponding or local brokers for brokerage services or sales assistance rendered to respondents in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, Albert W. Sisk & Son, Docket 4275, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce and on the part of respondent individuals, their agents, etc., (1) making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, of any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, Albert W. Sisk & Son, Docket 4275, November 30, 1940]

In the Matter of A. Fletcher Sisk, Theodore E. Fletcher, and Harold E. Stark, individuals, trading as Albert W. Sisk & Son

At a regular session of the Federal Trade Commission, held at its office in

the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondents named in the caption hereof, in which answer said respondents admit all the material allegations of fact set forth in said complaint, and state that they waive all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that said respondents have violated the provisions of section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondents in the capacities of field brokers, and in connection with the resale in interstate commerce of commodities purchased by respondents, the respondents A. Fletcher Sisk, Theodore E. Fletcher and Harold E. Stark, trading under the name Albert W. Sisk & Son, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondents to corresponding or local brokers for brokerage services or sales assistance rendered to respondents in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce the respondents A. Fletcher Sisk, Theodore E. Fletcher and Harold E. Stark, trading under the name Albert W. Sisk & Son, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sell-

ers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account.

It is further ordered, That the respondents named in the caption hereof shall, within thirty (30) days after service upon them of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5552; Filed, December 12, 1940;
11:19 a. m.]

[Docket No. 4282]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF THOMAS ROBERTS
& COMPANY

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondents, their agents, etc., (1) making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, Thomas Roberts & Company, Docket 4282, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with the resale in interstate commerce of commodities purchased by respondents, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers, of an

amount representing, in whole or in part, brokerage currently being paid by respondents to local brokers for brokerage services rendered to respondents in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, Thomas Roberts & Company, Docket 4282, November 30, 1940]

In the Matter of Walter W. Thrasher, Willoughby J. Rothrock, Linton A. Thrasher and Wainwright Churchill, individuals trading as Thomas Roberts & Company

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondents named in the caption hereof, in which answer said respondents admit all the material allegations of fact set forth in said complaint, and state that they waive all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the respondents have violated the provisions of section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in purchasing commodities in interstate commerce the respondents Walter W. Thrasher, Willoughby J. Rothrock, Linton A. Thrasher and Wainwright Churchill, trading under the name Thomas Roberts & Company, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondents' own account.

¹ 5 FR. 3567.

¹ 5 FR. 3571.

It is further ordered, That in connection with the resale in interstate commerce of commodities purchased by respondents, the respondents Walter W. Thrasher, Willoughby J. Rothrock, Linton A. Thrasher and Wainwright Churchill, trading under the name Thomas Roberts & Company, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondents to local brokers for brokerage services rendered to respondents in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That the respondents named in the caption hereof shall, within thirty (30) days after service upon them of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5553; Filed, December 12, 1940;
11:20 a. m.]

[Docket No. 4283]

PART 3—DIGEST OF CEASE AND DESIST ORDERS

IN THE MATTER OF C. F. UNRUH BROKERAGE COMPANY

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondents in the capacity of field brokers, and in connection with the resale in interstate commerce of commodities purchased by respondents, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondents to corresponding or local

brokers for brokerage services or sales assistance rendered to respondents in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527, 15 U.S.C., Supp. IV, sec. 13 (c) [Cease and desist order, C. F. Unruh Brokerage Company, Docket 4283, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondents, their agents, etc., (1) making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof upon purchases of commodities made for respondents' own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c) [Cease and desist order, C. F. Unruh Brokerage Company, Docket 4283, November 30, 1940]

In the Matter of Charles F. Unruh and Robert A. Harris, Jr., individuals, trading as C. F. Unruh Brokerage Company

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondents named in the caption hereof, in which answer said respondents admit all the material allegations of fact set forth in said complaint, and state that they waive all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the said respondents have violated the provisions of Section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondents in the capacity of field brokers, and in

5 FR. 3572.

connection with the resale in interstate commerce of commodities purchased by respondents, the said respondents Charles F. Unruh and Robert A. Harris, Jr., trading under the name C. F. Unruh Brokerage Company, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondents to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondents to corresponding or local brokers for brokerage services or sales assistance rendered to respondents in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce, the said respondents Charles F. Unruh and Robert A. Harris, Jr., trading under the name C. F. Unruh Brokerage Company, or any other name, their agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondents' own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof upon purchases of commodities made for respondents' own account.

It is further ordered, That the respondents named in the caption hereof shall, within thirty (30) days after service upon them of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5554; Filed, December 12, 1940;
11:20 a. m.]

[Docket No. 4234]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF C. G. REABURN & COMPANY

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, C. G. Reaburn & Company, Docket 4284, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondent, his agents, etc., (1) making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, C. G. Reaburn & Company, Docket 4284, November 30, 1940]

In the Matter of Cecil G. Reaburn, an Individual, Trading as C. G. Reaburn and Company

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondent named in the caption hereof, in which answer said respondent admits all the material allegations of fact set forth in said complaint, and states that he waives all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the respondent has violated the provisions of Section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, the respondent Cecil G. Reaburn, trading under the name of C. G. Reaburn and Company, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce the respondent Cecil G. Reaburn, trading under the name C. G. Reaburn and Company, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

¹ 5 F.R. 3573.

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account.

It is further ordered, That the respondent shall, within thirty (30) days after service upon him of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which he has complied with this order.

By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5555; Filed, December 12, 1940;
11:21 a. m.]

[Docket No. 4292]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF H. M. RUFF & SON

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers, of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing, in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, H. M. Ruff & Son, Docket 4292, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondent, his agents, etc., (1) making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof, any amount representing or reflecting, in

whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, H. M. Ruff & Son, Docket 4292, November 30, 1940]

In the Matter of H. Weldon Ruff, an Individual Trading as H. M. Ruff & Son

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondent, in which answer said respondent admits all the material allegations of fact set forth in said complaint, and states that he waives all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the respondent H. Weldon Ruff has violated the provisions of section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, the respondent H. Weldon Ruff, trading under the name H. M. Ruff & Son, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce the respondent H. Weldon Ruff, trading under the name H. M. Ruff & Son, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account.

It is further ordered, That the respondent shall, within thirty (30) days after service upon him of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which he has complied with this order.

By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5556; Filed, December 12, 1940; 11:21 a. m.]

[Docket No. 4298]

PART 3—DIGEST OF CEASE AND DESIST ORDERS

IN THE MATTER OF AMERICAN BROKERAGE COMPANY, INC.

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, (1) granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever directly or indirectly, anything of value as a commission, brokerage, or

other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, American Brokerage Company, Inc., Docket 4298, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondent, its officers, etc., (1) making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, American Brokerage Company, Inc., Docket 4298, November 30, 1940]

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondent named in the caption hereof, in which answer said respondent admits all the material allegations of fact set forth in said complaint, and states that it waives all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that the said respondent has violated the provisions of Section 2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, the respondent, American Brokerage Company, Inc., its officers, representatives, agents and employees, do forthwith cease and desist from:

(1) Granting or making any allowances or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of

¹ 5 F.R. 3621.

No. 242—2

¹ 5 F.R. 3576.

such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce the respondent, American Brokerage Company, Inc., its officers, representatives, agents and employees, do forthwith cease and desist from:

(1) Making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account.

It is further ordered, That the respondent, American Brokerage Company, Inc., shall, within thirty (30) days after service upon it of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which it has complied with this order.

By the Commission.

[SEAL] OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5557; Filed, December 12 1940;
11:22 a. m.]

[Docket No. 4340]

PART 3—DIGEST OF CEASE AND DESIST ORDERS

IN THE MATTER OF WILLIAM SILVER & COMPANY

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, (1) granting or making any allowance or discounts in lieu of brokerage to any purchaser in such transactions by selling

commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and (2) granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, William Silver & Company, Docket 4340, November 30, 1940]

§ 3.45 (e) (1) *Discriminating in price—Indirect discrimination—Brokerage payments.* In purchasing commodities in interstate commerce, and on the part of respondent, his agents, etc., (1) making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and (2) accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account; prohibited. (Sec. 2 (c), 49 Stat. 1527; 15 U.S.C., Supp. IV, sec. 13 (c)) [Cease and desist order, William Silver & Company, Docket 4340, November 30, 1940]

In the Matter of William E. Silver and Francis S. Silver, individuals, trading as William Silver & Company

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 30th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission and the answer of the respondent William E. Silver, in which answer said respondent admits all the material allegations of fact set forth in said complaint, and states that he waives all intervening procedure and further hearing as to said facts, and upon the motion to dismiss filed by respondent Francis S. Silver, and the Commission having made its findings as to the facts and its conclusion that the respondent William E. Silver has violated the provisions of Section

¹ 5 F.R. 4103.

2 (c) of the Clayton Act, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Sec. 13);

It is ordered, That in connection with sales of commodities in interstate commerce effected for sellers by respondent in the capacity of a field broker, and in connection with the resale in interstate commerce of commodities purchased by respondent, the respondent William E. Silver, trading under the name William Silver & Company, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Granting or making any allowance or discounts in lieu of brokerage to any purchaser in such transactions by selling commodities to any of such purchasers at a price reflecting a reduction from the prices at which sales of such commodities are currently being effected by respondent to other customers of an amount representing, in whole or in part, brokerage currently being paid by respondent to corresponding or local brokers for brokerage services or sales assistance rendered to respondent in effecting sales of such commodities to other purchasers thereof; and

(2) Granting or allowing in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance or discount in lieu thereof to any purchaser in such transactions.

It is further ordered, That in purchasing commodities in interstate commerce the respondent William E. Silver, trading under the name William Silver & Company, or any other name, his agents, employees and representatives, do forthwith cease and desist from:

(1) Making purchases of commodities for respondent's own account at a price or on a basis which reflects a deduction or reduction, or is arrived at or computed by deducting or subtracting, from the prices at which sellers are selling commodities to other purchasers thereof any amount representing or reflecting, in whole or in part, brokerage currently being paid by sellers to their brokers on sales of commodities made for said sellers by, or by said sellers through, their said brokers; and

(2) Accepting from sellers in any manner or form whatever, directly or indirectly, anything of value as a commission, brokerage, or other compensation or any allowance and discount in lieu thereof upon purchases of commodities made for respondent's own account.

It is further ordered, That the complaint herein be, and the same hereby is, dismissed as to the respondent Francis S. Silver for the reason that it appears that this respondent, prior to the issuance of the complaint herein, dissociated himself from the business in connection with which the practices involved herein were alleged and are found to have been engaged in.

It is further ordered, That the respondent William E. Silver shall, within thirty (30) days after service upon him of this order, file with the Federal Trade Commission a report in writing, setting forth in detail the manner and form in which he has complied with this order. By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5559; Filed, December 12, 1940;
11:23 a. m.]

[Docket No. 3802]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF PENICK & FORD, LTD., INC.

§ 3.45 (e) (1.5) *Discriminating in price—Indirect discrimination—Charges and prices—Classifications generally.* In connection with offer for sale, sale and distribution of glucose or corn syrup unmixed in interstate commerce to purchasers described in stipulation of facts entered in proceeding in question [i. e., as set forth therein, candy manufacturers in various cities competitively engaged in sale to chain stores, wholesalers and retailers in the several states, etc., of their product, in many kinds of which, made by them, such syrup is one of the major raw materials, as in Commission's findings in detail set forth], (1) discriminating in price between different purchasers of glucose or corn syrup unmixed of like grade or quality, either directly or indirectly, in the manner and degree as found in Paragraph Five of the Commission's findings as to the facts and conclusion [i. e., as there set forth, selling its said syrup at higher delivered prices per hundred pounds to purchasers located in cities other than Chicago, than those at which it concurrently sells its said product to purchasers in said city, and at prices which were not uniformly higher than those at which said product was being concurrently sold to Chicago purchasers, but which varied with geographical location of other cities in which purchasers were located; with result that, through such differentials in price which made more than due allowance for differences in cost of delivery, it discriminated in price between favored and unfavored purchasers, candy manufacturers mostly, and with result, by reason of the effect of such discrimination upon said unfavored manufacturers' business, as in detail in the findings set forth, that such discrimination might substantially lessen competition between favored and unfavored purchasers, tend to create a monopoly in the former, and injure, destroy and prevent competition therewith], or (2) otherwise selling said products to some of the aforesaid purchasers thereof at a different price than to other purchasers, the effect whereof may be substantially to lessen competition or tend to create a monopoly in the

line of commerce in which customers of the respondent are engaged, or to injure, destroy or prevent competition with any person who either grants or receives the benefit of such discrimination, prohibited; subject to the provision, however, that nothing shall prevent price differences which make only due allowance for differences in the cost of manufacture, sale or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered; and subject to further provision that nothing shall prevent respondent from showing that its lower price to any purchaser or purchasers was made in good faith to meet an equally low price of a competitor. (Sec. 2 (a), 49 Stat. 1526; 15 U.S.C., Supp. IV, sec. 13 (a) [Cease and desist order, Penick & Ford, Ltd., Inc., Docket 3802, November 29, 1940]

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 29th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission, the answer filed herein by the respondent, Penick & Ford, Ltd., Inc., and the stipulation of facts entered into between the Chief Counsel for the Commission and counsel for the respondent and filed herein, wherein counsel for respondent states his desire to waive hearings on the charges set forth in the complaint and not to contest the proceeding, and the Commission having made its findings as to the facts and its conclusion, based upon the stipulation of facts wherein respondent admitted the facts solely for the purpose of this proceeding, which findings and conclusion are hereby made a part hereof, that said respondent violated the provisions of an Act of Congress entitled "An Act to supplement existing laws against unlawful restraints and for other purposes" approved October 15, 1914, as amended by the Robinson-Patman Act, approved June 19, 1936 (U.S.C. Title 15, Section 13);

It is ordered, That respondent, Penick & Ford, Ltd., Inc., a corporation, its officers, directors, representatives, agents and employees, in connection with the offering for sale, sale and distribution of glucose or corn syrup unmixed in interstate commerce to purchasers described in said stipulation of facts, do forthwith cease and desist:

(1) from discriminating in price between different purchasers of glucose or corn syrup unmixed of like grade or quality, either directly or indirectly, in the manner and degree as found in Paragraph Five of the Commission's findings as to the facts and conclusion; from continuing or resuming such discriminations in prices as so found by the Commission, and from otherwise discriminating in price in manner and degree substantially

similar to such discriminations as so found by the Commission;

(2) from otherwise selling said products to some of the aforesaid purchasers thereof at a different price than to other purchasers, the effect whereof may be substantially to lessen competition or tend to create a monopoly in the line of commerce in which customers of the respondent are engaged, or to injure, destroy or prevent competition with any person who either grants or receives the benefit of such discrimination: *Provided*, That nothing shall prevent price differences which make only due allowance for differences in the cost of manufacture, sale or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered; *And provided further*, That nothing shall prevent respondent from showing that its lower price to any purchaser or purchasers was made in good faith to meet an equally low price of a competitor.

It is further ordered, That the said respondent, Penick & Ford, Ltd., Inc., shall, within sixty (60) days after service upon it of this order, file with the Commission a report in writing, setting forth in detail the manner and form in which it has complied with this order.

By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5572; Filed, December 12, 1940;
11:39 a. m.]

[Docket No. 4093]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF WHOLESALE LIQUOR DISTRIBUTORS' ASSOCIATION OF NORTHERN CALIFORNIA, INC., ET AL.

§ 3.24 (b) (5) *Coercing and intimidating—Customers—To limit distribution to regular channels: § 3.27 (f) Combining or conspiring—To limit distribution to regular channels: § 3.27 (h) Combining or conspiring—To restrain and monopolize trade: § 3.30 (g) Cutting off competitors' access to customers or market—Withholding supplies from competitors' customers.* I. In connection with sale and distribution of alcoholic beverages in interstate commerce, and on the part of respondent Gooderham & Worts, Ltd., and six other respondent corporations, as distillers, and respondent Browne Vintners Co., Inc., and two other respondent corporations, as importers, and their respective officers, etc., entering into any agreement, contract or understanding, either verbal or written, one with another, with intent or effect of preventing or hindering any wholesaler, jobber or dealer, or any class of wholesalers, jobbers or dealers, from obtaining alcoholic beverages from the sellers thereof; or enforcing or attempting to enforce any such agreement, contract or understanding through (a)

¹ 4 F.R. 2342.

refusing to sell or threatening to refuse to sell any alcoholic beverage to a cooperative buying association or any jobber or dealer or any class of jobbers or dealers, (b) boycotting or threatening to boycott the product or products of any distiller or any importer, or blacklisting any liquor dealer who sells to a cooperative buying association or a jobber or jobbers, or dealer or dealers not coming within the approved class, or (c) soliciting information directly or through the agency of respondent Wholesale Liquor Distributors Association or respondent Liquor Trades' Stabilization Bureau, Inc., or through any other agency, regarding distillers, importers, or wholesale liquor dealers who sell alcoholic beverages to a cooperative buying association or to dealers not within the approved class, or disseminating or threatening to disseminate such information to distillers, importers, wholesale liquor dealers or other distributors; prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs II, III, IV, V and VI, and subject to provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-Trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

§ 3.24 (e) (1) *Coercing and intimidating—Suppliers of competitors—By boycotting and threats of:* § 3.27 (f) *Combining or conspiring—To limit distribution to regular channels:* § 3.27 (h) *Combining or conspiring—To restrain and monopolize trade:* § 3.33 (e) *Cutting off competitors' supplies—Threatening withdrawal of patronage.* II. In connection with purchase and transportation, or sale and distribution, of alcoholic beverages in interstate commerce, and on the part of respondent Rathjen Bros., Inc., and four other respondents, and respondent partners, engaged in importation from foreign countries and purchase in various states of such beverages and in sale and distribution thereof at wholesale in "Northern California Territory" herein involved and in commerce, and on the part of their respective officers, etc., and on the part of various respondent individuals, officers and directors of respondent Wholesale Liquor Distributors' Association, etc., entering into any agreement, contract or understanding, either verbal or written, one with another, or with any two or more distillers or importers or with a dis-

tiller and another importer of alcoholic beverages, with intent or effect of preventing or hindering any wholesaler, jobber or dealer, or any class of wholesalers, jobbers or dealers, from obtaining alcoholic beverages from the sellers thereof; or enforcing or attempting to enforce any such agreement, contract or understanding, through (a) refusing to sell or threatening to refuse to sell any alcoholic beverages to a cooperative buying association or any jobber or dealer or any class of jobbers or dealers, (b) boycotting or threatening to boycott the product or products of any distiller or any importer, or blacklisting any liquor dealer who sells to a cooperative buying association or a jobber or jobbers, or dealer or dealers not coming within the approved class, or (c) soliciting information directly or through the agency of said respondent Distributors' Association or said respondent Liquor Trades' Stabilization Bureau, Inc., or through any other agency, regarding distillers, importers, or wholesale liquor dealers who sell alcoholic beverages to a cooperative buying association or to dealers not within the approved class, or disseminating or threatening to disseminate such information to distillers, importers, wholesale liquor dealers or other distributors; prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs I, III, IV, V and VI, and subject to provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-Trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

§ 3.24 (a) (1.5) *Coercing and intimidating—Competitors—By threatening boycott:* § 3.24 (d10) (1) *Coercing and intimidating—Suppliers and sellers—To adopt resale price contracts and agreements:* § 3.24 (e) (1) *Coercing and intimidating—Suppliers of competitors—By boycotting and threats of:* § 3.27 (c10) *Combining or conspiring—To enforce or bring about resale price maintenance.* III. In connection with the sale and distribution of alcoholic beverages in interstate commerce, and on the part of respondent Gooderham & Worts, Ltd., and seven other corporations, as distillers, and respondent Somerset Importers, Ltd., and three other respondent corporations, as importers, and their respective officers, etc., entering into, continuing, or carrying out any contract, agreement, or understanding with one another, with intent or effect of maintaining specified standard or minimum resale prices, discounts or markups at which alcoholic beverages are to be sold by distillers, im-

porters, wholesalers or other distributors, or enforcing or attempting to enforce any such contract, agreement or understanding through (a) soliciting directly or through the agency of said respondent Distributors' Association, or said respondent Liquor Trades' Stabilization Bureau, Inc., or any other common agency, information with respect to distillers, importers, wholesale liquor dealers and retail liquor dealers who do not maintain fixed resale prices, discounts and markups and who do not adhere to such a merchandising policy, or disseminating or threatening to disseminate such information to distillers, importers, wholesale or retail liquor dealers, or (b) notifying distillers, importers, or wholesale liquor dealers or retail liquor dealers of said fixed wholesale or retail prices, discounts and markups, or of changes in said prices, discounts and markups, prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs I, II, IV, V and VI, and subject to provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-Trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

§ 3.24 (a) (1.5) *Coercing and intimidating—Competitors—By threatening boycott:* § 3.24 (d10) (1) *Coercing and intimidating—Suppliers and sellers—To adopt resale price contracts and agreements:* § 3.24 (e) (1) *Coercing and intimidating—Suppliers of competitors—By boycotting and threats of:* § 3.27 (c10) *Combining or conspiring—To enforce or bring about resale price maintenance:* § 3.33 (e) *Cutting off competitors' supplies—Threatening withdrawal of patronage.* IV. In connection with sale and distribution of alcoholic beverages in interstate commerce, and on the part of respondent Wholesale Liquor Distributors' Association of Northern California, Inc., and respondent Liquor Trades' Stabilization Bureau, Inc., common agency, and on the part of respondent Rathjen Bros., Inc., and four other respondents, and respondent partners, engaged in importation from foreign countries and purchase in various states of such beverages and in sale and distribution thereof at wholesale in "Northern California Territory" herein involved, and in commerce, and on the part of their respective officers, etc., and on the part of various respondent individuals, officers and directors of respondent Wholesale Liquor Distributors' Association, etc., entering

into, continuing, or carrying out any contract, agreement, or understanding with one another, with intent or effect of maintaining specified standard or minimum resale prices, discounts or markups, at which alcoholic beverages are to be sold by distillers, importers, wholesalers or other distributors, or enforcing or attempting to enforce any such contract, agreement or understanding through (a) soliciting, directly or through the agency of said respondent Distributors' Association or said respondent Liquor Trades' Bureau, or any other common agency, information with respect to distillers, importers, wholesale liquor dealers and retail liquor dealers who do not maintain fixed resale prices, discounts and markups and who do not adhere to such a merchandising policy, or disseminating or threatening to disseminate such information to distillers, importers, wholesale or retail liquor dealers, (b) notifying distillers, importers, or wholesale or retail liquor dealers of said fixed wholesale or retail prices, discounts and markups, or of changes in said prices, discounts and markups, (c) coercing or intimidating or attempting to coerce or intimidate any distillers or importer into the adoption of contracts and agreements designed and intended to maintain the prices, discounts and markups so fixed, or (d) boycotting or threatening to boycott the products of distillers, importers or wholesale liquor dealers who fail to maintain the prices, discounts and markups so fixed and who fail or refuse to cooperate in said merchandising policy, prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs I, II, III, V and VI, and subject to provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-Trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

§ 3.7 Aiding, assisting and abetting unfair or unlawful act or practice: § 3.24 (b) (5) Coercing and intimidating—Customers—To limit distribution to regular channels: § 3.24 (e) (1) Coercing and intimidating—Suppliers of competitors—By boycotting and threats of: § 3.27 (f) Combining or conspiring—To limit distribution to regular channels: § 3.27 (h) Combining or conspiring—To restrain and monopolize trade: § 3.30 (g) Cutting off competitors' access to customers or market—Withholding supplies from competitors' customers:

§ 3.33 (e) Cutting off competitors' supplies—Threatening withdrawal of patronage. V. In connection with sale and distribution of alcoholic beverages in interstate commerce, or with purchase and transportation, or sale and distribution, of such beverages in said commerce, and on the part of respondent Wholesale Liquor Distributors' Association of Northern California, Inc., and respondent Liquor Trades' Stabilization Bureau, Inc., [composed of distillers, importers, distributors, and retailers of said beverages, and including all respondents herein], and on the part of their respective officers, etc., or any of them, enforcing or attempting to enforce, by any method or means, any contract, agreement, or understanding which in effect classifies wholesalers, jobbers, or dealers in alcoholic beverages for the purpose and with the effect of preventing or hindering any wholesaler, jobber or dealer or any class of wholesalers, jobbers or dealers from obtaining alcoholic beverages for resale, as set forth in Paragraphs I and II hereof, prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs I, II, III, IV and VI, and subject to the provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-Trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

§ 3.7 Aiding, assisting and abetting unfair or unlawful act or practice: § 3.24 (a) (1.5) Coercing and intimidating—Competitors—By threatening boycott: § 3.24 (b) (1) Coercing and intimidating—Customers—To maintain resale prices: § 3.24 (d10) (1) Coercing and intimidating—Suppliers and sellers—To adopt resale price contracts and agreements: § 3.24 (e) (1) Coercing and intimidating—Suppliers of competitors—By boycotting and threats of: § 3.27 (c10) Combining or conspiring—To enforce or bring about resale price maintenance: § 3.33 (e) Cutting off competitors' supplies—Threatening withdrawal of patronage. VI. In connection with sale and distribution of alcoholic beverages in interstate commerce, and on the part of respondent Wholesale Liquor Distributors' Association of Northern California, Inc., and respondent Liquor Trades' Stabilization Bureau, Inc. [composed of distillers, importers, distributors, and retailers of said beverages, and including all respondents herein], and on the part of their respective officers, etc., or any of

them, enforcing or attempting to enforce, by any method or means, any contract, agreement, or understanding, either verbal or written, among distillers or among importers or among wholesalers, or between one or more distillers and one or more importers, or between one or more distillers and one or more wholesalers, or between one or more distillers and one or more importers and one or more wholesalers, the purpose or effect of which is to maintain specified standard or minimum resale prices, discounts or markups at which alcoholic beverages are to be sold by any distiller or any importer or any wholesaler or any other distributor of alcoholic beverages, as set forth in Paragraphs III and IV hereof, prohibited, along with five other groups of acts and practices embraced in order of case, and therein identified as Paragraphs I, II, III, IV, and V, and subject to provision that nothing in such order is to be construed as prohibiting respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-trust Act, as amended. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Wholesale Liquor Distributors' Association of Northern California, Inc., et al., Docket 4093, November 28, 1940]

In the Matter of Wholesale Liquor Distributors' Association of Northern California, Inc., a Corporation, Its Officers, Directors and Members; Liquor Trades' Stabilization Bureau, Inc., a Corporation, Its Officers, Directors and Members; Rathjen Bros., Inc., a Corporation; Gooderham & Worts, Ltd., a Corporation; Somerset Importers, Ltd., a Corporation; Parrott & Co., a Corporation; McKesson & Robbins, Inc., a Corporation; Browne Vintners Co., Inc., a Corporation; Seagram Distillers Corporation, a Corporation; Brown-Forman Distillers Corporation, a Corporation; The Fleischmann Distilling Corporation, a Corporation; National Distillers' Products Corporation, a Corporation; Schenley Distilleries, Inc., a Corporation; Frankfort Distilleries, Inc., a Corporation; Hiram Walker, Incorporated, a Corporation; Haas Bros., a Corporation; Tonkin Distributing Co., a co-partnership composed of Joseph M. Tonkin and Sidney Modlin; Coffin-Redington Co., a Corporation; J. M. Tonkin, Individually, and as President, a Member and as a Director of the Wholesale Liquor Distributors' Association of Northern California, Inc.; Max Sobel, Individually and as Secretary-Treasurer, a Member and a Director of the Wholesale Liquor Distributors' Association of Northern California, Inc.; Sante Quattrin, Individually and as

Executive Secretary of the Wholesale Liquor Distributors' Association of Northern California, Inc.; J. A. Ferrari, as Vice President and as a Member and Director of the Wholesale Liquor Distributors' Association of Northern California, Inc.; A. M. Berberian, Charles Bigley, J. J. Bottaro, H. L. Hanson, Thomas Lenehan, R. F. Jose, Floyd Trombetta, Andrew Rosaia, C. L. Sauer, John Pingree and Sherwood Coffin, as Individuals, and as Members and Directors of Wholesale Liquor Distributors' Association of Northern California, Inc.

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 28th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission on the complaint of the Commission and the answers of respondents, in which answers respondents admit all the material allegations of fact set forth in said complaint and state that they waive all intervening procedure and further hearings as to said facts, and the Commission having made its findings as to the facts and the conclusion that said respondents have violated the provisions of the Federal Trade Commission Act;

I. *It is ordered*, That the respondents Gooderham & Worts Limited, a corporation; Brown-Forman Distillers Corporation, a corporation; Fleischmann Distilling Corporation, a corporation; National Distillers' Products Corporation, a corporation; Schenley Distilleries, Inc., a corporation; Frankfort Distilleries, Incorporated, a corporation; Hiram Walker Incorporated, a corporation, as distillers; and Browne Vintners Co., Inc., a corporation; Rathjen Bros., Inc., a corporation; and McKesson & Robbins, Inc., a corporation, as importers; their respective officers, agents, and employees, or any of them, in connection with the sale and distribution of alcoholic beverages in interstate commerce, do forthwith cease and desist from:

(1) Entering into any agreement, contract or understanding, either verbal or written, one with another, for the purpose or with the effect of preventing or hindering any wholesaler, jobber or dealer, or any class of wholesalers, jobbers or dealers, from obtaining alcoholic beverages from the sellers thereof; or enforcing or attempting to enforce any such agreement, contract or understanding by any of the following methods or means:

(a) Refusing to sell or threatening to refuse to sell any alcoholic beverage to a cooperative buying association or any jobber or dealer or any class of jobbers or dealers;

(b) Boycotting or threatening to boycott the product or products of any distiller or any importer, or blacklisting any liquor dealer who sells to a cooperative buying association or a jobber or jobbers, or dealer or dealers not coming within the approved class;

(c) Soliciting information directly or through the agency of the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., or respondent Liquor Trades' Stabilization Bureau, Inc., or through any other agency, regarding distillers, importers, or wholesale liquor dealers who sell alcoholic beverages to a cooperative buying association or to dealers not within the approved class; disseminating or threatening to disseminate such information to distillers, importers, wholesale liquor dealers or other distributors.

II. *It is further ordered*, That the respondents Rathjen Bros., Inc., a corporation; Parrott & Co., a corporation; McKesson & Robbins, Inc., a corporation; Haas Brothers, a corporation; Tonkin Distributing Co., a co-partnership composed of Joseph M. Tonkin and Sidney Modlin; Coffin-Redington Company, a corporation; their respective officers, agents and employees, or any of them; and Joseph M. Tonkin (named in complaint as J. M. Tonkin), Max Sobel, J. F. Ferrari, Sante Quattrin, A. M. Berberian, Charles Bigley, J. J. Bottaro, H. L. Hanson, Thomas Lenehan, R. F. Jose, Floyd Trombetta, Andrew Rosaia, C. L. Sauer, and John Pingree, or any of them, in connection with the purchase and transportation or the sale and distribution of alcoholic beverages in interstate commerce, do forthwith cease and desist from:

(1) Entering into any agreement, contract or understanding, either verbal or written, one with another, or with any two or more distillers or importers or with a distiller and another importer of alcoholic beverages for the purpose or with the effect of preventing or hindering any wholesaler, jobber or dealer, or any class of wholesalers, jobbers or dealers, from obtaining alcoholic beverages from the sellers thereof; or enforcing or attempting to enforce any such agreement, contract or understanding by any of the following methods or means:

(a) Refusing to sell or threatening to refuse to sell any alcoholic beverage to a cooperative buying association or any jobber or dealer or any class of jobbers or dealers;

(b) Boycotting or threatening to boycott the product or products of any distiller or any importer, or blacklisting any liquor dealer who sells to a cooperative buying association or a jobber or jobbers, or dealer or dealers not coming within the approved class;

(c) Soliciting information directly or through the agency of the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., or respondent Liquor Trades' Stabilization Bureau, Inc., or through any other agency, regarding distillers, importers, or wholesale liquor dealers who sell alcoholic beverages to a cooperative buying association or to dealers not within the approved class; disseminating or threatening to disseminate such information to distillers, importers, wholesale liquor dealers or other distributors.

III. *It is further ordered*, That the respondents Gooderham & Worts Limited, a corporation; Brown-Forman Distillers Corporation, a corporation; The Fleischmann Distilling Corporation, a corporation; National Distillers' Products Corporation, a corporation; Schenley Distilleries, Inc., a corporation; Frankfort Distilleries, Incorporated, a corporation; Hiram Walker Incorporated, a corporation; Seagram-Distillers Corporation, a corporation, as distillers; and Somerset Importers, Ltd., a corporation; Browne Vintners Co., Inc., a corporation; Rathjen Bros., Inc., a corporation; and McKesson & Robbins, Inc., a corporation, as importers; their respective officers, agents, servants and employees, or any of them, in connection with the sale and distribution of alcoholic beverages in interstate commerce, do forthwith cease and desist from entering into, continuing, or carrying out any contract, agreement, or understanding with one another, the purpose or effect of which is to maintain specified standard or minimum resale prices, discounts or markups at which alcoholic beverages are to be sold by distillers, importers, wholesalers or other distributors, or from enforcing or attempting to enforce any such contract, agreement or understanding by any of the following methods or means:

(a) Soliciting directly or through the agency of the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., or the respondent Liquor Trades' Stabilization Bureau, Inc., or any other common agency, information with respect to distillers, importers, wholesale liquor dealers and retail liquor dealers who do not maintain fixed resale prices, discounts and markups and who do not adhere to such a merchandising policy; disseminating or threatening to disseminate such information to distillers, importers, wholesale or retail liquor dealers;

(b) Notifying distillers, importers, or wholesale liquor dealers or retail liquor dealers of said fixed wholesale or retail prices, discounts and markups;

(c) Notifying distillers, importers, wholesale liquor dealers or retail liquor

dealers of changes in said prices, discounts and markups.

IV. *It is further ordered*, That the respondent wholesalers, Wholesale Liquor Distributors' Association of Northern California, Inc., a corporation; Liquor Trades' Stabilization Bureau, Inc., a corporation; Rathjen Bros., Inc., a corporation; Parrott & Co., a corporation; McKesson & Robbins, Inc., a corporation; Haas Brothers, a corporation; Tonkin Distributing Co., a co-partnership composed of Joseph M. Tonkin and Sidney Modlin; Coffin-Redington Company, a corporation; their respective officers, agents, servants and employees, or any of them; and the individual respondents, Joseph M. Tonkin, Max Sobel, J. F. Ferrari, Sante Quattrin, A. M. Berberian, Charles Bigley, J. J. Bottaro, H. L. Hanson, Thomas Lenehan, R. F. Jose, Floyd Trombetta, Andrew Rosala, C. L. Sauer and John Pingree, or any of them, in connection with the sale and distribution of alcoholic beverages in interstate commerce, do forthwith cease and desist from entering into, continuing, or carrying out any contract, agreement, or understanding with one another, the purpose or effect of which is to maintain specified standard or minimum resale prices, discounts or markups, at which alcoholic beverages are to be sold by distillers, importers, wholesalers or other distributors, or from enforcing or attempting to enforce any such contract, agreement, or understanding by any of the following methods or means:

(a) Soliciting directly or through the agency of the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., or the respondent Liquor Trades' Stabilization Bureau, Inc., or any other common agency, information with respect to distillers, importers, wholesale liquor dealers and retail liquor dealers who do not maintain fixed resale prices, discounts and markups and who do not adhere to such a merchandising policy; disseminating or threatening to disseminate such information to distillers, importers, wholesale or retail liquor dealers;

(b) Notifying distillers, importers, or wholesale liquor dealers or retail liquor dealers of said fixed wholesale or retail prices, discounts and markups;

(c) Notifying distillers, importers, wholesale liquor dealers or retail liquor dealers of change in said prices, discounts and markups;

(d) Coercing or intimidating or attempting to coerce or intimidate any distillers or importer into the adoption of contracts and agreements designed and intended to maintain the prices, discounts and markups so fixed;

(e) Boycotting or threatening to boycott the products of distillers, importers or wholesale liquor dealers who fail to maintain the prices, discounts and markups so fixed and who fail or refuse to cooperate in said merchandising policy.

V. *It is further ordered*, That the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., and the respondent Liquor Trades' Stabilization Bureau, Inc., their respective officers, agents, servants and employees, or any of them, do forthwith cease and desist from enforcing or attempting to enforce by any method or means, any contract, agreement, or understanding which in effect classifies wholesalers, jobbers or dealers in alcoholic beverages for the purpose and with the effect of preventing or hindering any wholesaler, jobber or dealer or any class of wholesalers, jobbers or dealers from obtaining alcoholic beverages for resale, as set forth in Paragraphs I and II hereof.

VI. *It is further ordered*, That the respondent Wholesale Liquor Distributors' Association of Northern California, Inc., and the respondent Liquor Trades' Stabilization Bureau, Inc., their respective officers, agents, servants and employees, or any of them, do forthwith cease and desist from enforcing or attempting to enforce by any method or means any contract, agreement, or understanding, either verbal or written, among distillers or among importers or among wholesalers, or between one or more distiller and one or more importer, or between one or more distiller and one or more wholesaler, or between one or more importer and one or more wholesaler, the purpose or effect of which is to maintain specified standard or minimum resale prices, discounts or markups at which alcoholic beverages are to be sold by any distiller or any importer or any wholesaler or any other distributor of alcoholic beverages, as set forth in Paragraphs III and IV hereof.

VII. *It is further ordered*, That nothing in this order is to be construed as prohibiting the respondents from entering into such contracts or agreements relating to the maintenance of resale prices as are not prohibited by the provisions of the Sherman Anti-trust Act, as amended.

VIII. *It is further ordered*, That the complaint herein, be, and the same hereby is, dismissed as to the respondent Sherwood Coffin.

IX. *It is further ordered*, That the respondents shall within sixty (60) days after service upon them of this order file with the Commission in writing a report

setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5573; Filed, December 12, 1940;
11:39 a. m.]

[Docket No. 4097]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF MERRICK NATIONAL
COMPANY ETC.

§ 3.99 (b) *Using or selling lottery devices—In merchandising.* Selling, etc., in connection with offer, etc., in commerce, of candy or other merchandise, any merchandise so packed and assembled that sales thereof to the public are to be, or may be, made by means of a game of chance, gift enterprise or lottery scheme, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Merrick National Company etc., Docket 4097, November 29, 1940]

§ 3.99 (b) *Using or selling lottery devices—In merchandising.* Supplying, etc., in connection with offer, etc., in commerce, of candy or other merchandise, others with assortments of any merchandise, together with push or pull cards, punchboards or other devices, or separately, which said push or pull cards, punchboards or other devices are to be, or may be, used in selling or distributing said merchandise to the public by means of a game of chance, gift enterprise, or lottery scheme, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Merrick National Company etc., Docket 4097, November 29, 1940]

§ 3.99 (b) *Using or selling lottery devices—In merchandising.* Supplying, etc., in connection with offer, etc., in commerce, of candy or other merchandise, others with packages or assortments of candy containing pieces of candy of uniform size and shape having centers of different colors, together with larger pieces of candy, or other merchandise, or separately, which said larger pieces of candy or other merchandise are to be, or may be, given as prizes to purchasers procuring pieces of candy having centers of a particular color, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Merrick National Company, etc., Docket 4097, November 29, 1940]

§ 3.99 (b) *Using or selling lottery devices—In merchandising.* Supplying, etc., in connection with offer, etc., in commerce, of candy or other merchandise, others with assortments of candy composed of individually wrapped pieces of candy of uniform size and shape and of different colors, together with articles of merchandise, or separately, which said other articles of merchandise are to be, or may be, given as prizes to the purchasers procuring pieces of said candy of a particular color, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Merrick National Company, etc., Docket 4097, November 29, 1940]

§ 3.99 (b) *Using or selling lottery devices—In merchandising.* Selling, etc., in connection with offer, etc., in commerce, of candy or other merchandise, any merchandise by means of a game of chance, gift enterprise, or lottery scheme, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Merrick National Company etc., Docket 4097, November 29, 1940]

In the Matter of Montague L. Merrick, and Edna H. Merrick, individually, and as copartners trading under the names of Merrick National Company and Chocolate Confections Company.

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 29th day of November, A. D. 1940.

This proceeding having been heard¹ by the Federal Trade Commission upon the complaint of the Commission, the answer of respondents, and the stipulation as to the facts entered into by and between counsel for the Commission and counsel for the respondents, and the Commission having made its findings as to the facts and conclusion that said respondents have violated the provisions of the Federal Trade Commission Act;

It is ordered, That the respondents Montague L. Merrick and Edna H. Merrick, individually and as copartners trading under the names of Merrick National Company and Chocolate Confections Company, or trading under any other name or names, their representatives, agents and employees, directly or through any corporate or other device, in connection with the offering for sale, sale and distribution of candy or any other merchandise in commerce as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist from:

¹ 5 F.R. 1660.

(1) Selling and distributing any merchandise so packed and assembled that sales of such merchandise to the public are to be made, or may be made, by means of a game of chance, gift enterprise, or lottery scheme;

(2) Supplying to, or placing in the hands of others, assortments of any merchandise together with push or pull cards, punchboards, or other devices, or separately, which said push or pull cards, punchboards or other devices are to be used, or may be used, in selling or distributing said merchandise to the public by means of a game of chance, gift enterprise, or lottery scheme;

(3) Supplying to, or placing in the hands of others, packages or assortments of candy containing pieces of candy of uniform size and shape having centers of different colors, together with larger pieces of candy, or other merchandise, or separately, which said larger pieces of candy or other merchandise are to be given, or may be given, as prizes to purchasers procuring pieces of candy having centers of a particular color;

(4) Supplying to, or placing in the hands of others, assortments of candy composed of individually wrapped pieces of candy of uniform size and shape and of different colors together with other articles of merchandise, or separately, which said other articles of merchandise are to be given or may be given as prizes to the purchasers procuring pieces of said candy of a particular color;

(5) Selling or otherwise disposing of any merchandise by means of a game of chance, gift enterprise, or lottery scheme;

It is further ordered, That the respondents shall within sixty (60) days after service upon them of this order file with the Commission a report in writing, setting forth in detail the manner and form in which they have complied with this order.

By the Commission.

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5574; Filed, December 12, 1940;
11:39 a. m.]

[Docket No. 4264]

PART 3—DIGEST OF CEASE AND DESIST ORDERS

IN THE MATTER OF KUHN REMEDY COMPANY

§ 3.6 (t) *Advertising falsely or misleadingly—Qualities or properties of product:* § 3.6 (x) *Advertising falsely or misleadingly—Results:* § 3.6 (y) *Advertising falsely or misleadingly—Safety:* § 3.71 (e) *Neglecting, unfairly or deceptively, to make material disclosure—Safety:* § 3.96 (b) (5.5) *Using mislead-*

ing name—Vendor—Products. In connection with offer, etc., of respondent's formerly designated "Kuhn's Rheumatic Fever Remedy" and, as presently known, "Kuhn's Remedy," or other similar medicinal preparation, (1) disseminating, etc., advertisements by means of the United States mails, or in commerce, or by any means, to induce, etc., directly or indirectly, purchase in commerce, etc., of said preparation, which advertisements represent, directly or through inference, that such product is a cure or remedy for rheumatism, rheumatic fever, gout, neuralgia or lumbago, that it is a cure or remedy for muscular or joint aches or pains generally, that it possesses any therapeutic value in the treatment of rheumatism, rheumatic fever, gout, neuralgia or lumbago, in excess of affording temporary symptomatic relief from the aches and pains associated with such disorders, or that it is in all cases safe or harmless; or which advertisements fail to reveal that said preparation should not be used by those having tuberculosis or goiter; or (2) using the word "Remedy" or any other word of similar import or meaning, as part of respondent's corporate or trade name, or to designate, describe, or in any way refer to, such preparation in connection with the offer, etc., thereof in commerce; prohibited; subject to provision, however, in case of aforesaid prohibition of advertisements which fail to reveal that preparation should not be used by those having tuberculosis or goiter, that such advertisements need contain only a statement that said preparation should be used only as directed on the label thereof, when such label contains a warning to the effect that the preparation should not be used by those having tuberculosis or goiter. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Kuhn Remedy Company, Docket 4264, November 29, 1940]

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 29th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission upon the amended and supplemental complaint of the Commission and the answer of the respondent, in which answer respondent admits all of the material allegations of fact set forth in said amended and supplemental complaint and states that it waives all intervening procedure and further hearing as to said facts, and the Commission having made its findings as to the facts and its conclusion that said respondent has violated the provisions of the Federal Trade Commission Act;

It is ordered, That the respondent, Kuhn Remedy Company, a corporation, its officers, representatives, agents and employees, directly or through any corporate or other device, in connection with the offering for sale, sale or distribution of its medicinal preparation, formerly designated "Kuhn's Rheumatic Fever Remedy" and now known as "Kuhn's Remedy", or any other medicinal preparation composed of substantially similar ingredients or possessing substantially similar therapeutic properties, whether sold under the same name or under any other name, do forthwith cease and desist from directly or indirectly:

1. Disseminating or causing to be disseminated any advertisement (a) by means of the United States mails or (b) by any means in commerce, as "commerce" is defined in the Federal Trade Commission Act, which advertisement represents, directly or through inference, that said preparation is a cure or remedy for rheumatism, rheumatic fever, gout, neuralgia or lumbago; that said preparation is a cure or remedy for muscular or joint aches or pains generally; that said preparation possesses any therapeutic value in the treatment of rheumatism, rheumatic fever, gout, neuralgia or lumbago, in excess of affording temporary symptomatic relief from the aches and pains associated with such disorders; that said preparation is in all cases safe or harmless; or which advertisement fails to reveal that said preparation should not be used by those having tuberculosis or goiter (Provided, however, That such advertisement need contain only a statement that said preparation should be used only as directed on the label thereof, when such label contains a warning to the effect that the preparation should not be used by those having tuberculosis or goiter);

2. Disseminating or causing to be disseminated any advertisement by any means for the purpose of inducing, or which is likely to induce, directly or indirectly, the purchase in commerce, as "commerce" is defined in the Federal Trade Commission Act, of said preparation, which advertisement contains any of the representations prohibited in Paragraph 1 hereof, or which advertisement fails to reveal that said preparation should not be used by those having tuberculosis or goiter (Provided, however, That such advertisement need contain only a statement that said preparation should be used only as directed on the label thereof, when such label contains a warning to the effect that the preparation should not be used by those having tuberculosis or goiter).

No. 242—3

3. Using the word "Remedy" or any other word of similar import or meaning, as part of respondent's corporate or trade name, or to designate, describe, or in any way refer to, such preparation in connection with the offering for sale, sale or distribution of such preparation in commerce as "commerce" is defined in the Federal Trade Commission Act.

It is further ordered, That the respondent shall, within ten (10) days after service upon it of this order, file with the Commission an interim report in writing stating whether it intends to comply with this order and, if so, the manner and form in which it intends to comply; and that within sixty (60) days after service upon it of this order, said respondent shall file with the Commission a report in writing, setting forth in detail the manner and form in which it has complied with this order.

By the Commission,

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5575; Filed, December 12, 1949;
11:40 a. m.]

[Docket No. 4295]

PART 3—DIGEST OF CEASE AND DESIST
ORDERS

IN THE MATTER OF BECKER CLOAK COMPANY,
INC.

§ 3.6 (c) *Advertising falsely or misleadingly—Composition of goods:* § 3.6 (cc) (4) *Advertising falsely or misleadingly—Source or origin—Place—Domestic product as imported:* § 3.55 *Furnishing means and instrumentalities of misrepresentation or deception:* § 3.66 (a7) *Misbranding or mislabeling—Composition:* § 3.96 (a) (1) *Using misleading name—Goods—Composition.* In connection with offer, etc., in commerce, of women's textile fabric garments, (1) using the word "Persian", or any term containing the word "Persian" to designate, describe or in any way refer to, textile fabric garments which simulate Persian lamb peltries in appearance, or (2) representing or implying in any manner that textile fabric garments are made from the peltries of Persian lambs, the young of the Karakul breed of sheep, or that such garments are made from wool taken from such lambs, when they are not made from such wool, or (3) representing in any manner that such garments are imported from Persia, or any other foreign country, or are made from imported materials, when they are not in fact so imported or made from imported materials, or (4) using any pictorial design of a sheep or lamb, or of any other wool-bearing animal, in con-

nection with any description of, or reference to, textile fabric garments which are not made from the wool of the animal so depicted, prohibited. (Sec. 5, 38 Stat. 719, as amended by Sec. 3, 52 Stat. 112; 15 U.S.C., Supp. IV, sec. 45b) [Cease and desist order, Becker Cloak Company, Inc., Docket 4295, November 29, 1940]

At a regular session of the Federal Trade Commission, held at its office in the City of Washington, D. C., on the 29th day of November, A. D. 1940.

This proceeding having been heard by the Federal Trade Commission upon the complaint of the Commission, the answer of the respondent, and a stipulation as to the facts entered into by the respondent herein and W. T. Kelley, Chief Counsel for the Commission, which provides, among other things, that without further evidence or other intervening procedure, the Commission may issue and serve upon the respondent herein findings as to the facts and conclusion based thereon and an order disposing of the proceeding, and the Commission having made its findings as to the facts and conclusion that said respondent has violated the provisions of the Federal Trade Commission Act;

It is ordered, That the respondent, Becker Cloak Company, Inc., a corporation, its officers, representatives, agents and employees, directly or through any corporate or other device, in connection with the offering for sale, sale and distribution of women's textile fabric garments in commerce, as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist from:

1. Using the word "Persian," or any term containing the word "Persian" to designate, describe or in any way refer to, textile fabric garments which simulate Persian lamb peltries in appearance;

2. Representing or implying in any manner that textile fabric garments are made from the peltries of Persian lambs, the young of the Karakul breed of sheep; or representing that such garments are made from wool taken from such lambs, when they are not made from such wool;

3. Representing in any manner that such garments are imported from Persia, or any other foreign country, or are made from imported materials, when they are not in fact so imported or made from imported materials;

4. Using any pictorial design of a sheep or lamb, or of any other wool-bearing animal, in connection with any description of, or reference to, textile fabric garments which are not made from the wool of the animal so depicted.

It is further ordered, That the respondent shall, within sixty (60) days after

the service upon it of this order, file with the Commission a report in writing, setting forth in detail the manner and form in which it has complied with this order.

By the Commission,

[SEAL]

OTIS B. JOHNSON,
Secretary.

[F. R. Doc. 40-5576; Filed, December 12, 1940;
11:40 a. m.]

TITLE 43—PUBLIC LANDS: INTERIOR

CHAPTER III—GRAZING SERVICE

PART 501—THE FEDERAL RANGE CODE

AMENDMENT TO MEET REQUIREMENTS OF THE SOLDIERS' AND SAILORS' CIVIL RELIEF ACT OF 1940

Pursuant to sections 2 and 3 of the Taylor Grazing Act of June 28, 1934 (48 Stat. 1269), as amended, and sections 501 (2) and 507 of the Soldiers' and Sailors' Civil Relief Act of 1940 (Pub. No. 861, 76th Cong.), Part 501 (the Federal Range Code) is amended as follows:

§ 501.6 *Issuance of licenses and permits* is amended by inserting the following new paragraph as paragraph (d):

(d) *Suspension of licenses and permits under Soldiers' and Sailors' Civil Relief Act of 1940.* Any licensee or permittee who enters military service, as defined in section 101 (1) of the Soldiers' and Sailors' Civil Relief Act of 1940, may elect at the beginning of or at any time during the period of such service to suspend his license or permit, in whole or in part, for such period and six months thereafter, subject to the following:

(1) The licensee or permittee shall file with the regional grazier an application, in triplicate, the original of which shall be sworn to before a notary public or other officer authorized to administer oaths in the State in which the applicant resides, or before the officer in immediate command and holding a commission in the branch of the service in

which the applicant is engaged, which shall set forth the facts and circumstances upon which the application for suspension of the license or permit is based. If the applicant desires the suspension of a license or permit in more than one region a separate application shall be filed with the regional grazier for each region.

(2) Upon approval of the application the suspension shall be effective for the period involved, unless sooner terminated upon further application to the regional grazier by the licensee or permittee, and no operations under the license or permit to the extent suspended shall be conducted during such period.

(3) No grazing fees will be assessed under a license or permit to the extent and during the period it is suspended and, upon the approval of an application for suspension, any fees that have been paid for the period of suspension will be refunded and any fees that are or may become due for such period will be remitted.

(4) A special temporary license, to the extent of any grazing privileges suspended, may be issued to another applicant for the period of such suspension, but upon the termination of the suspension, either by reason of the expiration of the six months' period following the conclusion of the first licensee's or permittee's military service or by reason of an application by the first licensee or permittee for an earlier termination, such a temporary license shall be revocable as of the beginning of the grazing period next following the termination of the suspension.

(5) No suspension granted hereunder shall entitle a licensee or permittee to any greater privileges subsequently than those to which he would have been entitled in the absence of a suspension.

(6) Any adverse action by the regional grazier on an application for suspension or termination thereof may be appealed by the applicant to an examiner of the Grazing Service, and from his decision to

the Secretary of the Interior. The procedure in such appeals shall conform as nearly as practicable with the procedure defined in § 501.9 (section 9 of the Federal Range Code).

§ 501.6 is further amended by relettering old paragraph (d) as paragraph (e).

§ 501.8 *Fees; time of payment; refunds*, paragraph f is amended to read as follows:

(f) *Refunds* No refund of fees properly paid will be made because of a failure to use the grazing privileges, either in whole or in part, represented by a license or permit, except that:

(1) During periods of range depletion due to severe drought or other natural causes or in case of a general epidemic of disease during the life of a license or permit, the Secretary of the Interior will in his discretion remit, refund, reduce in whole or in part, or postpone the payment of fees for such depletion period as long as the emergency exists.

(2) When fees have been paid which are not required by law, or in excess of lawful requirements, an application for refund may be made under the provisions of the act of June 27, 1930 (46 Stat. 822; 48 U.S.C. 98a).

(3) When a license or permit is suspended under section 501 (2) of the Soldiers' and Sailors' Civil Relief Act of 1940, any fees that have been paid for the period of suspension will be refunded and any fees that are or may become due for such period will be remitted.¹

A. D. MOLOHON,
Acting Director of Grazing.

Approved: December 5, 1940.

E. K. BURLEW,

Acting Secretary of the Interior.

[F. R. Doc. 40-5541; Filed, December 12, 1940;
9:46 a. m.]

¹ Issued under the authority contained in secs. 2, 3, 48 Stat. 1270-1272; 43 U. S. C. 315a, 315b; and secs. 501 (2), 507, Pub. No. 861, 76th Cong.

TITLE 49—TRANSPORTATION AND
RAILROADSCHAPTER I—INTERSTATE COM-
MERCE COMMISSION

[No. 3666]

REGULATIONS FOR TRANSPORTATION OF EX-
PLOSIONS AND OTHER DANGEROUS
ARTICLES

[The Order of the Commission, Parts 1 to 3 (through "Shipping Instructions") appeared in the Federal Register for Thursday, December 12, 1940, beginning at page 4908.]

CONTENTS

PART 3—Regulations applying to shippers.

Shipping container specifications.
Portable containers.
Tank cars, other than fusion-welded.
Tank cars, fusion-welded.

SHIPPING CONTAINER SPECIFICATIONS

SPECIFICATION 1A—BOXED CARBOYS

(Glass, Earthenware, Clay, or Stoneware)

General

1. *Compliance.* Required in all details.

2. (a) *Reuse of packages.* Parts of outside container and cushioning must be replaced when broken, decayed, or inefficient in any way.

(b) Carboys with lip cracked or badly chipped not authorized; gasket seat must be even. Packages must be capable of passing tests prescribed in paragraph 9.

3. *Closing devices required.* As follows except when otherwise authorized in the packing regulations:

(a) Acidproof stoppers or other devices, with gaskets, securely fastened; closures to be vented or sufficiently porous to vent off pressure; gaskets to be of $\frac{1}{4}$ " asbestos-rope or other resilient material equivalent in efficiency; gaskets cut from asbestos board not authorized.

(b) Glass stoppers ground to fit and securely fastened.

(c) Cork or other efficient device; authorized only when contents are not corrosive.

Manufacture

4. *Capacity and marking of carboy.* Containers 5 to 13 gallons are classed as carboys. Must be permanently marked to indicate maker and year of manufacture; mark of maker to be registered with the Bureau of Explosives.

5. *Glass carboys.* Thoroughly annealed; top of lip smooth and even; must contain at least 20 pounds of glass for 12-gallon carboys and 21 pounds for 13-gallon carboys. Glass in side walls should be well distributed and at least $\frac{1}{16}$ " thick. Defective carboys not authorized.

6. *Earthenware, clay, or stoneware carboys.* Of acidproof material.

7. (a) *Outside containers.* Wooden boxes completely enclosing body of car-

boy or wooden boxes completely enclosing body and neck of carboy, with 4 vertical corner posts, two cleats for shoes and two carrying cleats. (See par. 7 (e).)

(b) Lumber to be well seasoned, commercially dry, and free from decay, loose knots, knots that would interfere with nailing, and other defects that would materially lessen the strength.

(c) Assemble sides and ends with grain of wood horizontal and nail as specified. Nail bottom to sides and ends; fasten top by any efficient means. Cleats for shoes to be along edges of bottom parallel to carrying cleats. (See par. 7 (e).)

(d) *Parts and dimensions* as follows:

Carboy capacity, not over	Minimum dimensions			Nails—sides and bottom	
	Thickness—Sides, top, bottom, and ends	Vertical corner posts	Carrying cleats and shoes	Size, not less than	Spacing, average not over
Gallons 5 to 6	Inch $\frac{3}{8}$	Inches $\frac{3}{8} \times 2\frac{1}{2}$	Inches $\frac{3}{8} \times 1\frac{1}{2}$	Penny 7	Inches $2\frac{1}{4}$
7 to 13	$2\frac{3}{4}$	$2\frac{3}{4} \times 3\frac{1}{2}$	$2\frac{3}{4} \times 2\frac{1}{2}$	9	$2\frac{1}{4}$
				8	$2\frac{1}{4}$

* Other dimensions with equal cross section acceptable.
† Screws of equal efficiency authorized.
‡ Spacing 6 inches acceptable along edge grain of bottoms.

(e) In place of bottom cleats, the following is authorized: 2 angle irons at least $1\frac{1}{4}$ " x $1\frac{1}{4}$ " x $\frac{1}{16}$ ", applied across grain of bottom boards from corner to corner supported by acid resistant metal corner supports securely fastened to sides and ends at each bottom corner so as to raise bottom boards of box at least $\frac{3}{4}$ " above bottom of corner supports; nailing along end grain of bottom boards not required.

Marking of Outside Container

8. *On each container.* With letters and figures at least $\frac{3}{4}$ " high applied by hot branding iron or black printing ink with high pressure dies as follows:

(a) ICC-1A. This mark shall be understood to certify that the complete package complies with all specification requirements.

(b) Name or symbol (letters) of company setting up the package, or other party assuming responsibility for its compliance with specification requirements; this must be registered with the Bureau of Explosives and located just above or below the mark specified in (a).

Tests

9. (a) *Apparatus.* Standard required, as shown in specification 1A, effective Oct. 1, 1930. Detail prints can be obtained from Bureau of Explosives.

(b) *Method.* Fill with water to lower edge of neck; swing 55" measured from wall to nearest bottom edge of basket—1st: Side shock; test at least 10.

2nd: Bottom shock; test at least 5.

(c) *Acceptable results.* 90% of carboys must not break under side shock; same for bottom shock.

(d) *When required.* By each manufacturing and each filling plant; during each 6 months of each year, one series each year to be witnessed by representative of Bureau of Explosives; separate tests required for—

New packages (those with new outside container).

Used packages.

Packages with carboys differing over 2 gallons.

Packages differing in kind of cushioning.

(e) *Exception.* Tests not required by plant which fills and ships, for one shipment only, packages obtained from another plant where required tests are made.

(f) *Reports.* Required to be made to Bureau of Explosives on form as follows:

REPORT OF TESTS OF CARBOYS

(As required by I. C. C. Regulations and Specifications)

(Place) _____

(Date) _____

Test made for _____

(Give name and address of plant for which tests were made.)

Description of package	Results					
	No. of test	55-inch swing		No. of test	55-inch swing	
		Side	Bottom		Side	Bottom
Capacity	1			13		
Condition	2			14		
	3			15		
Type of inside container	4			16		
	5			17		
Cushioning	6			18		
	7			19		
Diameter of bottle	8			20		
	9			21		
Size of outside container (inside)	10			22		
	11			23		
	12			24		

Specification mark is _____

Identification symbol is _____

Remarks _____

(Signature) _____

(Per) _____

¹ State whether outside container is new or used.

² State whether glass, earthenware, etc.

³ State whether hay, mineral wool, ground cork, excelsior, wood strips _____ type, cork pads _____ type, etc.

10. Wirebound boxes of veneer or plywood or both and nailed plywood boxes which comply with this specification except paragraphs 7 (a), (c), and (d) are approved provided:

(a) Outside containers shall completely enclose body of carboy or body and neck of carboy.

(b) That complete inner packing and box specifications have been filed with and approved by the Bureau of Explosives.

(c) That these boxed carboys pass the regular tests prescribed in Par. 9.

¹ Complete table of contents appears on page 4909, issue of December 12, 1940.

(d) That boxed carboys after a minimum service period of 6 months pass the tests prescribed in Par. 9.

(e) That a detailed report of tests prescribed under Par. 10 (d) above has been filed with and accepted as satisfactory by the Bureau of Explosives.

SPECIFICATION 1B—BOXED LEAD CARBOYS

Containers must comply with specification 1A except as follows (paragraph references are to specification 1A):

2. (b) Test, see par. 9, required before each shipment.

3. *Closing.* By stoppers securely fastened.

3. (a), (b), and (c) These paragraphs do not apply.

4. *Capacity and marking of carboy.* Containers 5 to 13 gallons are classed as carboys. Must be permanently marked to indicate maker and year of manufacture; mark of maker to be registered with the Bureau of Explosives. *Manufacture of carboy.*—Of pure-chemical or pure-electrolytic virgin lead; side and bottom sheets 8 pounds and top sheets 10 pounds per square foot minimum; all seams burned.

5 and 6. These paragraphs do not apply.

7. (a) *Outside containers.* Wooden box, completely enclosing body of carboy, with 4 vertical corner posts, 2 cleats for shoes, and 2 carrying cleats. Corner posts not required when ends are twice the specified thickness.

8. (a) ICC—1 B. This mark shall be understood to certify that the complete package complies with all specification requirements.

9. (a) *Tests.* To 5 pounds per square inch internal pressure without leakage; required before each shipment.

9. (b), (c), (d), (e), and (f). These paragraphs do not apply.

SPECIFICATION 1C—CARBOYS IN KEGS

(Glass, Earthenware, Clay, or Stoneware)

Containers must comply with specification 1A except as follows (paragraph references are to specification 1A):

7. (a) *Manufacture of kegs.*—As follows: *Staves and headings.* To be of white oak, chestnut oak, red oak, black cherry, or Douglas fir; quarter sawed with the grain, from straight-grained timber, so no annual ring shall slope over half the thickness of stave or head; thoroughly kiln dried, moisture content 7% to 11%; free from rotten sap, checks, pitch pockets, cat faces, and other defects that show through on both sides. *Hoops.* To be of cooperage-grade hoop steel.

7. (b) *Staves.* To be sawed evenly and circular; croze center to be within $1\frac{1}{8}$ " of end of stave; stave end to have $\frac{1}{8}$ " free from bevel. *Heading.* Of uniform thickness and properly circled; planed on outside and properly jointed and glued, or doweled and flagged; dowel diameter not over $\frac{1}{2}$ " thickness of head.

7. (c) *The keg.* Stave joints reasonable flush on outside.

7. (d) *Parts required and dimensions.* As follows:

Staves, when finished on outside:

Capacity of container, not over—	Maximum			Minimum	
	Length	Width	Bilge circle	Staves	Thickness
Gallons	Inches	Inches	Inches	Number	Inch
30	30	5	74	16	$\frac{5}{8}$
15	24	$4\frac{1}{2}$	54	14	$\frac{1}{2}$
10	22	$4\frac{1}{4}$	50	12	$\frac{1}{2}$
5	18	4	40	10	$\frac{1}{2}$

Foregoing thicknesses are of staves finished on one side. One-sixteenth inch must be added for unfinished staves. Foregoing maximum lengths are authorized to be increased 6 percent or less, provided the thickness of stave is increased at least one-sixteenth inch for each increase of 1 inch in length or fraction thereof.

Heading, after planing:

Capacity of container, not over	Maximum		Minimum	
	Pieces	Diameter	Thickness	Width
Gallons	Number	Inches	Inch	Inches
30	6	18	$\frac{5}{8}$	$2\frac{1}{2}$
15	5	14	$\frac{1}{2}$	2
10	5	13	$\frac{1}{2}$	2
5	4	11	$\frac{1}{2}$	2

Hoops, number and size:

Capacity of container, not over (gallons)	Minimum number of hoops	Minimum size of hoops (inches in width and Birmingham gage)							
		Head		1st quarter		2d quarter		Bilge	
		Inch	Gage	Inch	Gage	Inch	Gage	Inch	Gage
30	6	$1\frac{1}{2}$	18	$1\frac{1}{2}$	19	-----	-----	$1\frac{1}{2}$	18
15	6	$1\frac{1}{2}$	19	$1\frac{1}{2}$	19	-----	-----	$1\frac{1}{2}$	19
10	6	$1\frac{1}{2}$	19	1	19	-----	-----	$1\frac{1}{2}$	19
5	6	1	19	1	19	-----	-----	1	19

8. *On each container.* With letters and figures at least $\frac{3}{4}$ " high applied near the bilge by hot branding iron or black printing ink with high pressure dies as follows:

8. (a) ICC—1C. This mark shall be understood to certify that the complete package complies with all specification requirements.

SPECIFICATION 2A—INSIDE CONTAINERS—METAL CANS, PAILS AND KITS

1. *Capacity.* Not over 10 gallons. *Thickness of metal.* At least 28-gauge, United States Standard (commercial 135-pound tin plate), for cans over 1-gallon capacity; smaller cans of metal of adequate thickness. *Test.* By interior pressure on each completed can, without leakage. *Closure.* Air-tight and leakproof.

SPECIFICATION 2B—METAL CANS

NOTE: Cancelled as this restriction has been found to be unnecessary.

SPECIFICATION 2C—INSIDE CONTAINERS—CORRUGATED FIBERBOARD CARTONS

1. *Construction.* To be of double-wall board, 275-pound strength, or 2 thick-

nesses of double-faced board, 175-pound strength, Mullen or Cady test; slides or linings to be 1-piece with joint cloth-taped.

2. Outside container must be lined throughout with, and cartons separated by, double-wall corrugated fiberboard of 275-pound strength, Mullen or Cady test.

SPECIFICATION 2D—INSIDE CONTAINERS—DUPLEX PAPER BAGS

Construction. Bags to be at least 2 thicknesses of No. 1 Kraft bag-paper, or equivalent, and as follows**:

Maximum weight of contents (pounds)	Minimum *weight (per 480 sheets 24" x 36") and strength			
	One sheet		Other sheet	
	*Weight (pounds)	Strength, Mullen test	*Weight (pounds)	Strength, Mullen test
2	30	30	30	30
6	50	50	40	40
12	60	60	50	50
25	70	70	60	60

*Weight 15% less authorized for rope paper containing 35% or more of Manila rope fiber.

**5-ply paper, of 60-pound No. 1 Kraft, also authorized for 25-pounds weight of contents.

Test. Bags, filled and closed as for shipment, must be able to withstand drop of 4 feet onto concrete without rupture or sifting, except that 2-foot drop is acceptable for bags to contain 25 pounds.

SPECIFICATION 2E—KITS AND PAILS

NOTE: Cancelled as this restriction has been found to be unnecessary.

SPECIFICATION 2F—INSIDE METAL CONTAINERS AND LINERS

1. Containers over 1-gallon capacity and all lining must be at least 30 gauge, United States Standard, (commercial 107-pound tin plate) and sealed leak-proof.

SPECIFICATION 2G—INSIDE CONTAINERS—FIBER CANS AND BOXES

1. Capacity not over 6 pounds, net. Metal tops, bottoms, and connections of suitable thickness are authorized. Minimum fiber thickness as follows:

(a) Up to $\frac{1}{4}$ -pound size: 0.021".

(b) Up to 1-pound size: 0.026".

(c) Up to 3-pound size: 0.036".

(d) Up to 6-pound size: 0.050", provided that 0.036" fiber heads with 130-pound strength* are authorized;

Or, 0.028" with 175-pound strength*;

Or, 0.036" with 90-pound strength*, provided each container is wrapped with No. 1 Kraft paper of 60-pound base weight pasted thereon.

*Mullen or Cady test.

SPECIFICATION 2H—CARTONS

NOTE: Cancelled as it is not referred to anywhere in the regulations and is considered as unnecessary.

SPECIFICATION 2J—INSIDE CONTAINERS—WATERPROOF PAPER BAGS FOR LININGS

1. *Material.* 2 sheets of paper cemented together and creped to afford

25% stretch; paper to be No. 1 Kraft, 30 pounds per ream (480 sheets, 24" x 36") before creping; total weight 90 pounds per ream.

2. *Test.* Material folded into cones and filled with water to depth of 2" at 70° F. must not show water on outside within 24 hours.

3. *Construction.* Form to fit the outside container without stretching; seams and closures to afford a siftproof bag.

SPECIFICATION 2K—INSIDE CONTAINERS— PAPER BAGS FOR LININGS

1. *Paper.* No. 1 Kraft, creped; at least 45 pounds per ream (480 sheets, 24" x 36") before creping. *Construction.* Form to fit the outside container without stretching; seams and closure to afford a siftproof bag.

SPECIFICATION 2L—LINING FOR BOXES

1. (a) Box lining must be of strong paraffined paper, or other suitable material, without joints or other openings at the bottom or at sides of box, and shall fully protect contents in contact with top of box.

(b) Tensile strength of material must be at least 35 pounds with the grain and 17 pounds across grain, tested by direct pull on strips measuring 3" by 1". Average results of three or more tests with the grain and three or more across grain shall be used.

(c) Material shall be impervious to water and nitroglycerin at 77° F. Test for imperviousness shall consist of folding material into cones, loosely to avoid breakage at creases. Cones tested for nitroglycerin shall be filled to 1" depth; those for water to 2". No leakage of liquid shall occur during 24 hours' exposure.

(d) Material must transmit no oily or greasy stain to unglazed paper. Test shall consist of placing one thickness of material, with two thicknesses of unglazed paper on each side, in an oven at 104° F. for 24 hours, under pressure of a lead disk 1½" thick and of 10 pounds weight resting edgewise on the paper.

(e) Saturating paraffin, when used, shall have melting point of 125° F. or above. Test shall consist of extracting paraffin from 1 ounce or more of material with ether. After evaporation of all ether, paraffin shall be melted and poured upon the surface of water contained in a hemispherical dish approximately 3¼" in diameter. Dish shall be three-fourths full of water above melting point of paraffin. Thermometer shall be placed with bulb three-fourths immersed in center of dish. Water and paraffin shall be allowed to cool until paraffin upon the surface of water commences to solidify. Temperature shall then be read and recorded as melting point of paraffin.

2. The following bag is also authorized:

(a) Material must be: 2 sheets of No. 1 sulphate Kraft paper joined by asphaltum or equivalent; outer sheet at least

60 pounds and inner sheet at least 30 pounds per ream (480 sheets, 24" x 36"); inner sheet coated with wax, or equivalent, with melting point at least 125° F.; compliance with paragraph 1 (b) and 1 (c) required.

(b) Seams must be pasted with adhesive not affected by nitroglycerin.

(c) Completed bag must be formed to fit outside container without undue strain and must be impervious to seepage of nitroglycerin.

SPECIFICATION 2M—WATERPROOFED PAPER LINING

1. Waterproofed paper for box lining must be strong, folded or constructed without joints or openings at sides, bottoms, or ends, and shall fully protect contents at top of box.

SPECIFICATION 2N—INSIDE CONTAINERS— METAL CANS

1. *Size.* Not over 14-pounds water capacity (388 cubic inches).

2. *Material.* Tin plate, good quality, as follows:

Maximum diameter of can	Minimum thickness of metal (inch)	
	In body	In heads
4½ inches..	0.01134 (1C-107 pound tin plate).	0.01305 (1XL-128 pound tin plate).
6½ inches..	0.01134 (1C-107 pound tin plate).	0.01485 (2XL-148 pound tin plate).

3. *Manufacture.* Seams soldered or full double seam. Outside surface rust-proofed by lacquer or equivalent.

4. *Test.* When closed as for shipment, must be capable of standing 40-pound interior pressure without leakage.

SPECIFICATION 3A—SEAMLESS STEEL CYLINDERS

General

1. *Compliance.* Required in all details.

2. (a) *Type and size.* Seamless; not over 1,000 pounds water capacity (nominal).

(b) *Service pressure.** At least 150 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-3A2000 indicates the service pressure as 2,000 pounds per square inch.

Inspection

3. *Inspection by whom and where.* By competent and disinterested inspector; chemical analyses and tests; as specified, to be made within limits of the United States.

4. (a) *Duties of inspector.* Inspect all material and reject any not complying with requirements; for cylinders made by billet-piercing process, billets to be inspected after nick and cold break.

(b) Verify chemical analysis of each heat of material by analysis or by obtaining certified analysis: *Provided,*

That a certificate from the manufacturer thereof, giving sufficient data to indicate compliance with requirements, is acceptable when verified by check analyses of samples taken from one cylinder out of each lot of 200 or less.

(c) Verify compliance of cylinders with all requirements including markings; inspect inside before closing in both ends; verify heat treatment as proper; obtain samples for all tests and check chemical analyses; witness all tests; verify threads by gauge; report volumetric capacity and tare weight (see report form) and minimum thickness of wall noted.

(d) Render complete report (par. 21) to purchaser, cylinder maker, and the Bureau of Explosives.

Material

5. *Steel.* Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.55; phosphorus, 0.045; sulphur, 0.050.

6. *Identification of material.* Required; any suitable method except that plates and billets for hot-drawn cylinders shall be marked with heat number.

7. *Defects.* Material with seams, cracks, laminations, or other injurious defects, not authorized.

Construction

8. *Manufacture.* By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder appreciably; reasonably smooth and uniform surface finish required.

9. (a) *Wall thickness.* For cylinders with service pressure less than 900 pounds the wall stress shall not exceed 24,000 pounds per square inch. Minimum wall 0.100" for any cylinder over 5" outside diameter.

(b) Calculation must be made by the formula:

$$S = \frac{P(1.3D^3 + 0.4d^3)}{D^3 - d^3} \quad \text{where } S =$$

wall stress in pounds per square inch; P=test pressure prescribed for water-jacket test or 450 pounds per square inch whichever is the greater; D=outside diameter in inches; d=inside diameter in inches.

10. *Heat treatment.* The completed cylinders must be uniformly and properly heat-treated prior to tests.

11. (a) *Openings in cylinder and connections* (valves, fuse plugs, etc.) for those openings. Threads required; to be clean cut, even, without checks, and tapped to gauge.

(b) Taper threads required for service pressure over 300 pounds per square inch; to be of length not less than as specified for American Standard taper pipe threads.

(c) Straight threads having at least 4 engaged threads are authorized for service pressure not over 300 pounds per square inch; to have tight fit and cal-

RECORD OF PHYSICAL TESTS OF MATERIAL FOR CYLINDERS

Numbered _____ to _____ inclusive.
 Size _____ inches outside diameter by _____ inches long
 Made by _____ Company
 For _____ Company

Test No.	Cylinders represented by test (Serial Nos.)	Yield point (pounds per square inch)	Tensile strength (pounds per square inch)	Elongation (percent in 8 inches)	Reduction of area (percent)	Flattening test

(Signed) _____
 (Place) _____
 (Date) _____

RECORD OF HYDROSTATIC TESTS ON CYLINDERS

Numbered _____ to _____ inclusive.
 Size _____ inches outside diameter by _____ inches long
 Made by _____ Company
 For _____ Company

Serial Nos. of cylinders tested	Actual test pressure (pounds per square inch)	Total expansion (cubic centimeters) ¹	Permanent expansion (cubic centimeters) ¹	Percent ratio of permanent expansion to total expansion ¹	Tare weight (pounds) ²	Volumetric capacity ²

NOTE: When specifications require test for only 1 out of each lot of 200 or less cylinders, the check on the others must be indicated by a notation hereon reading, "Each cylinder was subjected to a pressure of _____ pounds per square inch and showed no defect."

¹ If the tests are made by a method involving the measurement of the amount of liquid forced into the cylinder by the test pressure, then the basic data, on which the calculations are made, such as the pump factors, temperature of liquid, coefficient of compressibility of liquid, etc., must also be given.

² Do not include removable cap but state whether with or without valve. These weights must be accurate to a tolerance of 1 percent. Not required for empty shells for acetylene cylinders.

³ For cylinders, specifications 3B, 3C, 4B, 4C, and 8, report approximate maximum and minimum volumetric capacity for the lot. For specification 4 cylinders, report on 2 percent of the cylinders is acceptable.

(Signed) _____

22. *Additional type.* Cylinders made of steel commercially known as SAE 4130X with yield points over 70% of tensile strength are also authorized under the following restrictions:

(1) Chemical analysis: Carbon 0.25 to 0.35%; phosphorus, not over 0.04%; sulphur, not over 0.05%; manganese, 0.40 to 0.60%; chromium, 0.80 to 1.10%; molybdenum, 0.15 to 0.25%.

(2) Heat treatment shall consist of quenching in oil at approximately 1550° F., and drawing back at approximately 1250° F.

(3) Minimum wall thickness of cylinder shall be such that the wall stress shall not exceed 65,000 pounds per square inch

when calculated under paragraph 9 of this specification.

(4) Flattening test prescribed by paragraph 14 of this specification shall be made by flattening sample cylinder as far as possible, and record shall be kept of the extent to which flattening can be carried without cracking.

(5) Reports of manufacture and tests shall include the following information: Chemical analysis data on chromium, molybdenum and other alloying material present, if any; definite statement as to the heat treatment used; distance between the outside surfaces of the flattened cylinder when the first crack occurs.

SPECIFICATION 3B—SEAMLESS STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (b) *Service pressure**. At least 150 to not over 500 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-3B300 indicates the service pressure as 300 pounds per square inch.

3. *Inspection by whom and where.* By competent inspector; chemical analyses and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

13. (d) Cylinders must be tested as follows:

1st. Each cylinder; to 2 times service pressure.

2nd. Or, 1 cylinder out of each lot of 200 or less; to 3 times service pressure. Others must be examined under pressure of 2 times service pressure and show no defect.

SPECIFICATION 3BN—SEAMLESS NICKEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Seamless; not over 125 pounds water capacity (nominal).

2. (b) *Service pressure**. At least 150 to not over 500 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example ICC-3BN400 indicates the service pressure as 400 pounds per square inch.

3. *Inspection by whom and where.* By competent inspector; chemical analyses and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

4. (a) *Duties of inspector.* Inspect all material and reject any not complying with requirements.

5. *Nickel.* At least 99.0% pure nickel plus cobalt.

8. *Manufacture.* By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder

appreciably; reasonably smooth and uniform surface finish required. Cylinders closed in by spinning process not authorized.

9. (a) *Wall thickness.* The wall stress shall not exceed 15,000 pounds per square inch. Minimum wall 0.100" for any cylinder over 5" outside diameter.

10. *Heat treatment.* The completed cylinders must be uniformly and properly heat treated for ½ hour at 1000° F. prior to tests.

13. (d) Each cylinder must be tested to at least 2 times service pressure.

15. (b) *Specimens must be:* Gauge length 8" with width not over 1½ inches; or, gauge length 2" with width not over 1½ inches.

15. (c) Yield point must be taken as the stress in pounds per square inch corresponding to a strain of at least 0.003" per inch determined under cross head speed not over ¼" per minute; the zero point for strain measurement shall be taken at approximately 12,000 pounds per square inch.

16. *Acceptable results for physical and flattening tests.* Either of the following:

16. (a) Elongation at least 40% for 2" gauge length or at least 20% in other cases; yield point not over 50% of tensile strength; flattening test not required.

16. (b) Elongation at least 20% for 2" gauge length or 10% in other cases; yield point not over 50% of tensile strength; flattening required, without cracking, to 6 times wall thickness.

19. (a) ICC-***; stars to be replaced by specification number under which the container was made, followed by the service pressure (for example, ICC-3BN400, etc.)

19. (b) A serial number and an identifying symbol (letters); location of number to be just below the ICC mark; location of symbol to be just below the number. The symbol and numbers must be those of purchaser, user, or maker. The symbol must be registered with the Bureau of Explosives; duplications unauthorized.

Example:

ICC-3BN400
 1234
 XY

19. (c) Inspector's official mark, near serial number; date of test (such as 5-37 for May, 1937), so placed that dates of subsequent tests can be easily added.

SPECIFICATION 3C—SEAMLESS STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (b) *Service pressure**. At least 90 to not over 300 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-3C300 indicates the service pressure as 300 pounds per square inch.

3. *Inspection by whom and where.* By competent inspector; chemical analyses

and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

9. (a) *Wall thickness.* For cylinders with service pressure less than 900 pounds the wall stress shall not exceed 24,000 pounds per square inch. Minimum wall 0.100" for any cylinder over 5" outside diameter. Provided, that cylinders not over 3.881 cubic inches (16 gallons with 5% tolerance) capacity, not over 13" outside diameter, and with service pressure not over 90 pounds per square inch, may be made with wall thickness not less than 0.093".

13. (d) Cylinders must be tested as follows: 1 cylinder out of each lot of 200 or less; to 3 times service pressure. Others must be examined under pressure of 2 times service pressure and show no defect. If tested cylinder fails, each cylinder in the lot may be tested; those passing are acceptable.

SPECIFICATION 3D—SEAMLESS STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Seamless; not over 125 pounds water capacity (nominal); closing of bottom ends by spinning or swedging not authorized.

2. (b) *Service pressure.** Must be 480 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-3D480 indicates the service pressure as 480 pounds per square inch.

4. (c) Verify compliance of cylinders with all requirements including markings; inspect inside before closing in both ends; verify heat treatment as proper; obtain samples for all tests and check chemical analyses; witness all tests; verify threads by gauge; report volumetric capacity and tare weight (see report form) and minimum thickness of wall noted. Inspection of valves and protection caps is required.

8. *Manufacture.* By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder appreciably; reasonably smooth and uniform surface finish required. *Extension ring.* Top end of cylinder over 5" outside diameter must be fitted with section of tubing shrunk on, not welded to cylinder, and extending at least 4" below shoulder and above neck; thickness of ring as prescribed for cylinder wall; drain holes required.

8. (a) *Valve and protection cap.* Of metal substantially non-corrodible.

8. (b) Valve body and other parts subject to gas pressure when closed to be of forged, drawn, or extruded metal. Plug instead of valve is authorized.

8. (c) Protection cap must be at least $\frac{3}{16}$ " thick, gas tight, with $\frac{3}{16}$ " faced seat

for gasket, and with United States Standard form thread; it must not project beyond extension ring.

8. (d) *Assembly of valves to cylinder.* Selective method required so that at least 1 thread is left disengaged when screwed home. Efficient luting material required. Assembly by shippers is permitted without supervision by inspector.

9. (a) *Wall thickness.* The wall stress shall not exceed 16,000 pounds per square inch. Minimum wall 0.100" for any cylinder over 5" outside diameter.

11. (c) Acceptance not authorized under par. 11 (c).

16. (b) Elongation at least 20% for 2" gauge length or 10% in other cases; yield point not over 70% of tensile strength; flattening required, without cracking, to 4 times wall thickness.

17. This paragraph does not apply.

19. *On each cylinder.* By stamping plainly and permanently on shoulder, top head, or neck, and also on extension ring, as follows:

19. (a) ICC—3D480.

19. (b) *A serial † Number and an identifying symbol (letters);* location of number to be just below the ICC mark; location of symbol to be just below the number. The symbol and numbers must be those of purchaser, user, or maker. The symbol must be registered with the Bureau of Explosives; duplications unauthorized.

Example:

ICC—3D480

1234

XY

SPECIFICATION 3E—SEAMLESS STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Seamless. Must have outside diameter less than 2", length less than 2 feet.

2. (b) *Service pressure.** Must be 1,800 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC—3A1800 indicates the service pressure as 1,800 pounds per square inch.

3. *Inspection by whom and where.* By competent inspector; chemical analyses and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

4. (b) Verify chemical analysis of each heat of steel by analysis or by obtaining certified analysis: *Provided,* That check analysis of samples taken from one cylinder out of each lot of 200 or less is acceptable.

6. *Identification of steel.* Required; any suitable method.

9. (a) and (b) and 10. These paragraphs do not apply.

11. (b) Taper threads, when used, to be of length not less than as specified for American Standard taper pipe threads.

11. (c) Straight threads having at least 4 engaged threads are authorized; to have tight fit and calculated shear strength at least 10 times the test pressure of the cylinder; gaskets required, adequate to prevent leakage.

13. (a) *Hydrostatic test.*—Cylinders must be tested as follows: 1 cylinder out of each lot of 500 or less to be subjected to hydrostatic pressure until it bursts; bursting pressure must be at least 6,000 pounds per square inch. Others must be examined under pressure of 3,000 pounds per square inch and show no defect.

13. (b), (c), and (d), 14, 15 (a), (b), and (c), 16, 16 (a) and (b), and 17. These paragraphs do not apply.

19. *On each cylinder.* By stamping plainly and permanently as follows:

19. (a) ICC—3E1800.

19. (b) *An identifying symbol (letters);* location † to be just following or below the ICC mark. The symbol must be that of purchaser, user or maker. The symbol must be registered with the Bureau of Explosives; duplications unauthorized.

Example:

ICC—3E1800

XY

19. (c) Date of test (such as 5-37 for May 1937).

20. This paragraph does not apply.

21. *Inspector's report.* Required to be clear, legible, and in following form:

(Place) _____
(Date) _____
Steel Gas Cylinders.
Manufactured for _____ Company
Location at _____
Manufactured by _____ Company
Location at _____
Consigned to _____ Company
Location at _____
Quantity _____
Size _____ inches outside diameter by _____ inches
Marks stamped into the shoulder of the cylinder are:
Specification ICC—3E1800
Serial numbers _____ to _____ inclusive (if numbered).
Identifying symbol (registered) _____
Test date _____

These cylinders were made by process of _____

The steel used was identified by the following _____ numbers _____
(heat-purchase order)

The steel used was verified as to chemical analysis and record thereof is attached hereto. All material, such as plates, billets, and seamless tubing, was inspected and each cylinder was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the cylinder. The processes of manufacture and heat treatment were supervised and found to be efficient and satisfactory.

The cylinder walls were measured and the minimum thickness noted was _____ inch. The tare weight per cylinder without valve is _____ (approx.). The volumetric capacity per cylinder is _____ (approx.).

Each and every cylinder was properly tapped with a taper thread; the threads were inspected and found to be clean-cut, of proper length, and correct as to gauge.

One finished cylinder out of each lot of 500 or less was taken at random and burst by interior pressure with the following results:

Date of test	Pressure at which cylinder ruptured

Each and every cylinder with bottom closed in by spinning was subjected to an interior gas pressure of at least 1,800 pounds per square inch and showed no leakage.

Each and every cylinder was subjected to an internal pressure of at least 3,000 pounds per square inch and showed no defect.

I hereby certify that all of these cylinders proved satisfactory in every way and comply with the requirements of Interstate Commerce Commission Specification No. 3E except as follows:

Exceptions.

(Signed) _____

(Inspector)

RECORD OF CHEMICAL ANALYSIS OF STEEL FOR CYLINDERS

Number _____ to _____ inclusive.
Size _____ inches outside diameter by
_____ inches long.
Made by _____ Company
For _____ Company

Test No.	Heat No.	Check Analysis No.	Cylinders Represented Serial Nos.	Chemical analysis						
				C	P	S	Si	Mn	Ni	Cr

The analyses were made by _____
(Signed)

22. Acceptance not authorized under par. 22.

SPECIFICATION 4—FORGE WELDED STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Must be welded type; forge lap-welded seams required; not over 1,000 pounds water capacity (nominal).

2. (b) *Service pressure.** Must be 300 pounds per square inch.

*The "service pressure" limits the use of the cylinder.

5. *Steel.* Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050. *Provided,* That Bessemer steel with phosphorus not over 0.11% is authorized when carbon content is 0.20% or less.

9. (a) *Wall thickness.* The wall stress shall not exceed 18,000 pounds per square inch. Minimum wall 0.100" for any cylinder over 5" outside diameter.

10. *Heat treatment.* The completed cylinders must be uniformly and properly heat treated. Heat treatment after tests is authorized.

11. (b) *Taper threads required;* to be of length not less than as specified for American Standard taper pipe threads.

11. (c) Acceptance not authorized under par. 11 (c).

13. (d) Each cylinder must be tested to pressure of 700 pounds per square inch.

15. (a) *Physical test.* Required on 2 specimens cut from 1** cylinder, or part thereof heat treated as required, taken at random out of each lot of 200 or less.

16. *Acceptable results for physical and flattening tests.* As follows:

16. (a) Elongation at least 40% for 2" gauge length or at least 20% in other cases; yield point not over 70% of tensile strength; flattening test not required. *Exception.* Flattening test is required, without cracking, to 6 times wall thickness when cylinders are made of lap-welded pipe; in such case rings (crop ends) cut from each end of pipe must be tested with weld 45° or less from point of greatest stress; if a ring fails, another from the same end of pipe may be tested.

16. (b) Acceptance not authorized under par. 16 (b).

18. Reheat treatment authorized; subsequent thereto, acceptable cylinders must pass all prescribed tests. Repair by welding is authorized.

19. (a) ICC—4.

19. (b) *A serial number and an identifying symbol* (letters); location† of number to be just below the ICC mark; location† of symbol to be just below the serial number. The symbol and numbers must be those of purchaser, user, or maker. The symbol must be registered with the Bureau of Explosives; duplications unauthorized.

Example:

ICC—4
1234
XY

22. Acceptance not authorized under par. 22.

SPECIFICATION 4A—FORGE WELDED STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Must be welded type; forge lap-welded seams required; not over 1,000 pounds water capacity (nominal).

2. (b) *Service pressure.** At least 150 to not over 500 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-4A300 indicates the service pressure as 300 pounds per square inch.

5. *Steel.* Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050.

9. (a) *Wall thickness.* The wall stress shall not exceed 18,000 pounds per square inch for cylinders with longitudinal side seam nor 24,000 pounds per square inch for cylinders without such seam. Minimum wall 0.100" for any cylinder over 5" outside diameter.

10. *Heat treatment.* Body and heads formed by drawing or pressing must be uniformly and properly heat treated prior to tests.

15. (a) *Physical test.* Required on 2 specimens cut from 1** cylinder, or part thereof heat treated as required, taken at random out of each lot of 200 or less.

**For lots of 30 or less, physical and flattening tests are authorized to be made on a ring at least 8 inches long cut from each cylinder and subjected to same heat treatment as the finished cylinder.

16. *Acceptable results for physical and flattening tests.* As follows:

16. (a) Elongation at least 40% for 2" gauge length or at least 20% in other cases; yield point not over 70% of tensile strength; flattening test not required. *Exception.* Flattening test is required, without cracking, to 6 times wall thickness when cylinders are made of lap-welded pipe; in such case rings (crop ends) cut from each end of pipe must be tested with weld 45° or less from point of greatest stress; if a ring fails, another from the same end of pipe may be tested.

16. (b) Acceptance not authorized under par. 16 (b).

18. Reheat treatment authorized; subsequent thereto, acceptable cylinders must pass all prescribed tests. Repair by welding is authorized.

22. Acceptance not authorized under par. 22.

SPECIFICATION 4B—WELDED AND BRAZED STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) *Type and size.* Must be welded or brazed type; longitudinal seams must be forge lap-welded or brazed; not over 1,000 pounds water capacity (nominal).

2. (b) *Service pressure.** At least 150 to not over 500 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-4B300 indicates the service pressure as 300 pounds per square inch.

3. *Inspection by whom and where.* By competent inspector; chemical analyses and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

5. *Steel.* Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050.

8. *Manufacture.* By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder appreciably; reasonably smooth and uniform surface finish required. Exposed bottom welds on cylinders over 18" long must be protected by foot rings. Seams must be made as follows:

8. (a) *Circumferential seams:* By welding or by brazing. Heads attached by brazing must have a driving fit with the shell, unless the shell is crimped, swaged, or curled over the skirt or flange

of the head, and be thoroughly brazed until complete penetration by the brazing material of the brazed joint is secured. Depth of brazing from end of shell must be at least four times the thickness of shell metal.

8. (b) Longitudinal seams in shells: By forged lap welding or by copper brazing. When brazed, the plate edge must be lapped at least eight times the thickness of plate, laps being held in position, substantially metal to metal, by riveting or electric spot welding; brazing must be done by placing flux and brazing material on one side of seam and applying heat until this material shows uniformly along the seam on the other side.

9. (a) Wall thickness. The wall stress shall not exceed 18,000 pounds per square inch for cylinders with longitudinal side seam nor 24,000 pounds per square inch for cylinders without such seam: *Provided*, That a wall stress of not over 22,800 pounds per square inch is authorized for cylinders with copper brazed seam having strength at least $3/2$ times the strength of the steel wall. Minimum wall 0.100" for any cylinder over 5" outside diameter.

10. Heat treatment. Body and heads formed by drawing or pressing must be uniformly and properly heat treated prior to tests.

13. (d) Cylinders must be tested as follows:

1st. Each cylinder; to 2 times service pressure.

2nd. Or, 1 cylinder out of each lot of 200 or less; to 3 times service pressure. Others must be examined under pressure of 2 times service pressure and show no defect.

15. (a) Physical test. Required on 2 specimens cut from 1** cylinder, or part thereof heat treated as required, taken at random out of each lot of 200 or less.

**For lots of 30 or less, physical and flattening tests are authorized to be made on a ring at least 8 inches long cut from each cylinder and subjected to same heat treatment as the finished cylinder.

16. Acceptable results for physical and flattening tests. As follows:

16. (a) Elongation at least 40% for 2" gauge length or at least 20% in other cases; yield point not over 70% of tensile strength; flattening test not required. *Exception*. Flattening test is required, without cracking, to 6 times wall thickness when cylinders are made of lap-welded pipe; in such case rings (crop ends) cut from each end of pipe must be tested with weld 45° or less from point of greatest stress; if a ring fails, another from the same end of pipe may be tested.

16. (b) Acceptance not authorized under par. 16 (b).

18. Reheat treatment authorized; subsequent thereto, acceptable cylinders must pass all prescribed tests. Repair of brazed seams by brazing and welded seams by welding is authorized.

22. Acceptance not authorized under par. 22.

SPECIFICATION 4C—WELDED AND BRAZED STEEL CYLINDERS

Containers must comply with specification 3A except as follows (paragraph references are to specification 3A):

2. (a) Type and size. Must be welded or brazed type; longitudinal seams must be forge lap-welded or brazed; not over 1,000 pounds water capacity (nominal).

2. (b) Service pressure*. At least 90 to not over 300 pounds per square inch.

*The "service pressure" limits the use of the cylinder. It is generally shown by marks on cylinder; for example, ICC-4C300 indicates the service pressure as 300 pounds per square inch.

3. Inspection by whom and where. By competent inspector; chemical analyses and tests, as specified, to be made within limits of the United States. Interested inspectors are authorized.

5. Steel. Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050.

8. Manufacture. By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder appreciably; reasonably smooth and uniform surface finish required. Exposed bottom welds on cylinders over 18" long must be protected by foot rings. Seams must be made as follows:

8. (a) Circumferential seams: By welding or by brazing. Heads attached by brazing must have a driving fit with the shell, unless the shell is crimped, swaged, or curled over the skirt or flange of the head, and be thoroughly brazed until complete penetration by the brazing material of the brazed joint is secured. Depth of brazing from end of shell must be at least four times the thickness of shell metal.

8. (b) Longitudinal seams in shells: By forged lap welding or by copper brazing. When brazed, the plate edge must be lapped at least eight times the thickness of plate, laps being held in position, substantially metal to metal, by riveting or electric spot welding; brazing must be done by placing flux and brazing material on one side of seam and applying heat until this material shows uniformly along the seam on the other side.

9. (a) Wall thickness. The wall stress shall not exceed 18,000 pounds per square inch for cylinders with longitudinal side seam nor 24,000 pounds per square inch for cylinders without such seam: *Provided*, That a wall stress of not over 22,800 pounds per square inch is authorized for cylinders with copper brazed side seam having strength at least $3/2$ times the strength of the steel wall. Minimum wall 0.100" for any cylinder over 5" outside diameter: *Provided*, That

cylinders not over 3,881 cubic inches (16 gallons with 5% tolerance) capacity, not over 13" outside diameter, and with designed pressure not over 90 pounds per square inch, may be made with wall thickness not less than 0.093".

10. Heat treatment. Body and heads formed by drawing or pressing must be uniformly and properly heat treated prior to tests.

13. (d) Cylinders must be tested as follows: 1 cylinder out of each lot of 200 or less; to 3 times service pressure. Others must be examined under pressure of 2 times service pressure and show no defect. If tested cylinder fails, each cylinder in the lot may be tested; those passing are acceptable.

15. (a) Physical test. Required on 2 specimens cut from 1** cylinder, or part thereof heat treated as required, taken at random out of each lot of 200 or less.

**For lots of 30 or less, physical and flattening tests are authorized to be made on a ring at least 8 inches long cut from each cylinder and subjected to same heat treatment as the finished cylinder.

16. Acceptable results for physical and flattening tests. As follows:

16. (a) Elongation at least 40% for 2" gauge length or at least 20% in other cases; yield point not over 70% of tensile strength; flattening test not required. *Exception*. Flattening test is required, without cracking, to 6 times wall thickness when cylinders are made of lap-welded pipe; in such case rings (crop ends) cut from each end of pipe must be tested with weld 45° or less from point of greatest stress; if a ring fails, another from the same end of pipe may be tested.

16. (b) Acceptance not authorized under par. 16 (b).

18. Reheat treatment authorized; subsequent thereto, acceptable cylinders must pass all prescribed tests. Repair of brazed seams by brazing and welded seams by welding is authorized.

22. Acceptance not authorized under par. 22.

SPECIFICATION 5A—STEEL BARRELS OR DRUMS

[Removable head containers not authorized]

General

1. Compliance. Required in all details.

2. Rated capacity—as marked, see paragraph 11 (c). Actual capacity of straight-sided containers shall be not less than rated (marked) capacity plus 2%, nor greater than rated capacity plus 2% plus 1 quart; actual capacity of bilge-type containers must be not less than rated capacity, nor greater than rated capacity plus 2% plus 1 gallon.

Material

3. Composition. Sheets for body and heads to be low carbon, open hearth or electric steel.

4. Weight of sheets. Average draft weight for any gauge not less than as follows:

Gage, United States standard (No.)	Standard weight per square foot	Authorized tolerances	Gage, United States standard (No.)	Standard weight per square foot	Authorized tolerances
	<i>Pounds</i>	<i>Percent</i>		<i>Pounds</i>	<i>Percent</i>
12.....	4.375	5	19.....	1.750	3½
13.....	3.750	5	20.....	1.500	3½
14.....	3.125	5	22.....	1.250	3½
15.....	2.8125	5	24.....	1.000	2½
16.....	2.500	5	26.....	.750	2½
18.....	2.000	3½	28.....	.625	2½

Construction

5. (a) *Seams.* Body seams welded.

(b) Head and chime seams welded or double-seamed.

(c) Flanges for closures welded in place.

6. *Chime reinforcement.* Containers over 25 gallons capacity, with flanged head secured to body, to have chime reinforcement adequate for its protection.

7. *Parts and dimensions.* As follows:

Marked capacity over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Minimum	
					Size (gage or inch)	Weight (pounds per foot)
10	St. side	16	16	None		
30	do	16	16	I-bar	3/4x1 3/4	1.25
55	do	14	14	do	1x1 3/4	1.60
110	do	12	12	do	1x1 1/2	1.60
30	Bilge	14	16	None		
65	do	13	14	do		

8. *Rolling hoops.* Separate hoops to have tight fit on a shell and be firmly secured in place. Beading under rolling hoops or spot welding not permitted.

9. (a) *Closures*. Adequate to prevent leakage; gaskets required.

(b) *Closing part (plug, cap, plate, etc.) must be of metal as thick as prescribed for head of container; this not required for containers of 12 gallons or less when the opening to be closed is not over 2.3" diameter and the closing part is constructed, or fitted with sealing device, so that it cannot be removed without destroying it or the sealing device.

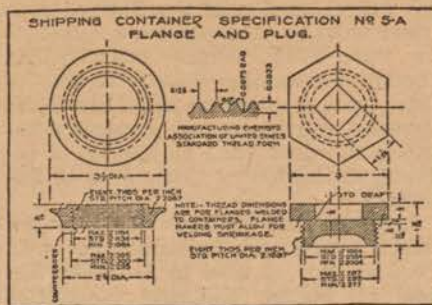
*This does not apply to a cap seal over a closure which closure complies with all requirements.

(c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 5 or more complete threads; two drainage holes of not over $\frac{5}{16}$ " diameter are allowed. Plug, or cap, must have sufficient length of thread to engage 5 threads when screwed home with gasket in place.

(d) Closure must be of screw-thread type or fastened by screw-thread device.

(e) Openings over 2.3" diameter not permitted. Threads for plug or cap must be 8 or less per inch when over $\frac{3}{4}$ "

standard pipe size; thread diameters and thread form must conform with the following drawing; other details shown on the drawing are recommended.



10. *Defective containers.* Leaks and other defects to be repaired by method used in constructing container, not by soldering.

Marking

11. On each container. By embossing on head with raised marks as follows:
(a) ICC—5A. This mark shall be understood to *certify* that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be recorded with the Bureau of Explosives.

(c) Gauge of metal in thinnest part, rated capacity in gallons, and year of manufacture (for example, 14-55-39). When gauge of metal in body differs from that in head, both must be indicated with slanting line between and with gauge of body indicated first (for example, 14/12-55-39 for body 14 gauge and head 12 gauge).

12. Size of markings (minimum).
 $\frac{1}{2}$ " high for 33-gallon or less, $\frac{3}{4}$ " for
 over 33 and not over 55 gallons, and 1"
 for over 55 gallons.

Tests

13. *Type tests.* Samples taken at random and closed as for use, shall withstand prescribed tests without leakage. Tests to be made of each type and size by each company starting production and to be repeated every four months. Samples last tested to be retained until further tests are made. The type tests are as follows:

(a) Test by dropping, filled with water to 98% capacity, from height of 6 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

(b) Hydrostatic pressure test of 80 pounds per square inch sustained for 5 minutes.

14. *Leakage test.* Each container shall be tested, with seams under water or covered with soapsuds or heavy oil, by interior air pressure of at least 15 pounds per square inch. Leakers shall be rejected or repaired and retested.

SPECIFICATION 5—STEEL BARRELS OR DRUMS†

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (b) and (c) These paragraphs do not apply.

7. *Parts and dimensions.* As follows:

Marked capacity over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Minimum	
					Size (gage or inch)	Weight (pounds per foot)
5	St. side	22	22	None		
10	do	20	20	do		
33	do	14	14	do		
33	do	18	18	U	16	
55	do	16	16	U	12	
110	do	14	14	U	12	
33	do	18	18	I-bar	34x134	1.25
55	do	16	16	do	34x134	1.25
110	do	14	14	do	34x134	1.25
33	do	16	16	(C)		
55	do	14	14	(C)		
33	Bilge	14	16	None		
55	do	13	14	do		

¹ Rolled or swedged in.

9. (c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 5 or more complete threads; two drainage holes of not over $\frac{5}{16}$ " diameter are allowed. Plug, or cap, must have sufficient length of thread to engage 5 threads when screwed home with gasket in place. Threaded bung closures consisting of any type other than welded flanges and plugs, must be of a type approved by the Bureau of Explosives for use, after submission of proof as to efficiency.

9. (d) and (e). These paragraphs do not apply.

11. (a) ICC—5. This mark shall be understood to *certify* that the container complies with all specification requirements.

13. (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.

SPECIFICATION 5B—STEEL BARRELS OR DRUMS†

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (b) and (c) These paragraphs do not apply.

7. *Parts and dimensions.* As follows:

Marked capacity over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Minimum	
					Size (gage or inch)	Weight (pounds per foot)
5	St. side	24	24	None		
10	do	22	22	do		
33	do	18	18	(1)		
55	do	16	16	(1)		
110	do	13	14	(1)		
33	Bilge	16	16	None		
55	do	14	14	do		

† Rolled or swaged in hoops.

9. (c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 3 or more complete threads; two drainage holes of not over $\frac{1}{8}$ " diameter are allowed. Plug, or cap, must have sufficient length of thread to engage 3 threads when screwed home with gasket in place. Threaded bung closures consisting of any type other than welded flanges and plugs, must be of a type approved by the Bureau of Explosives for use, after submission of proof as to efficiency.

9. (d) and (e). These paragraphs do not apply.

11. (a) ICC—5B. This mark shall be understood to *certify* that the container complies with all specification requirements.

13. (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.

SPECIFICATION 5C—STEEL BARRELS OR DRUMS

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

3. *Composition.* Steel must be, except for rolling hoops and chime reinforcement, as follows:

3. (a) All sheet metal, welding rod, closing devices, and samples taken from the welded portion of the finished container must be of 18 chrome 8 nickel alloy with 0.08% carbon maximum, 17-20% chromium, 7-11% nickel, or other types of stainless steel of equivalent corrosion resistance and physical properties; the steel must be capable of resisting the action of nitric acid as follows:

3. (b) In that the limit of inches per month penetration in accordance with corrosion test as used in American Society of Testing Materials Committee A-10 1933 collaboration testing program, shall be 0.0015", this figure to be an average of five 48-hour tests.

6. *Chime reinforcement.* Containers of 10 gallons capacity or over, with flanged head secured to body, to have chime reinforcement adequate for its protection.

7. *Parts and dimensions.* As follows:

Marked capacity over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Minimum	
					Size (gage or inch)	Weight (pounds per foot)
15	St. side	20	20	None		
30	do	18	18	I-bar	$\frac{3}{4} \times \frac{1}{4}$	1.25
55	do	16	16	do	$1 \times \frac{1}{4}$	1.60
110	do	14	14	do	$1 \times \frac{1}{2}$	1.60
30	Bilge	14	16	None		
55	do	13	14	do		

11. (a) ICC—5C. This mark shall be understood to *certify* that the container complies with all specification requirements.

11. (b) Name or symbol (letters) of maker; this must be recorded with the Bureau of Explosives. Also, by embossing or stamping, tare weight in pounds (for example TW121).

SPECIFICATION 5D—STEEL BARRELS OR DRUMS†—RUBBER LINED

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (a) *Rubber lining.* To be applied so as to adhere securely to metal throughout; to be tough and pliable. Hard rubber authorized to line closing devices.

5. (b) and (c) and 9 (e). These paragraphs do not apply.

11. (a) ICC—5D. This mark shall be understood to *certify* that the container complies with all specification requirements.

15. *Additional test.* On each container; by 110-volt electrical circuit between inside and outside of container filled with suitable electrolyte; a milliammeter must show zero reading.

SPECIFICATION 5E

Canceled. Replaced by 17E.

SPECIFICATION 5F—STEEL DRUMS

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

2. *Rated capacity*—as marked, see paragraph 11 (c). Not over 11 gallons.

4. *Weight of sheets.* Not less than 2.97 pounds per square foot.

5. (a) *Seams.* Body seams welded or brazed.

5. (b) Head and chime seams welded or brazed.

5. (c) Flanges for closures welded or brazed in place.

6. *Chime reinforcement.* Containers to have chime reinforcement adequate for its protection.

7. *Parts and dimensions.* Body and heads at least No. 14 gauge U. S. standard.

8. This paragraph does not apply.

9. (a) *Closures required.* Of screw-thread type and adequate to prevent leakage in transit. Openings over 2.3" diameter not permitted. Threads for connections (valve, bung, etc.) to be American Standard taper pipe threads, tapped to gauge, and clean cut to insure tight joints.

9. (b), (c), (d), and (e). These paragraphs do not apply.

11. (a) ICC—F. This mark shall be understood to *certify* that the container complies with all specification requirements. Serial number and name or symbol (letters) of company or person for whose use the containers are made are also required.

13. (b) Hydrostatic pressure test of 125 pounds per square inch sustained for 5 minutes.

14. *Leakage test.* Each container shall be tested, with seams under water or covered with soapsuds or heavy oil, by interior air pressure of at least 100 pounds per square inch. Leakers shall be rejected or repaired and retested.

SPECIFICATION 5G—STEEL BARRELS OR DRUMS

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

3. *Composition.* Steel must be, except for rolling hoops and chime reinforcement, an austenitic 18 and 8 chrome nickel alloy with carbon content not over 0.08%.

5. (c) This paragraph does not apply.

7. *Parts and dimensions.* As follows:

Marked capacity not over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Minimum	
					Size (gage or inch)	Weight (pounds per foot)
5	St. side	22	22	None		
10	do	20	20	do		
33	do	14	14	do		
33	do	18	18	U	16	
33	do	16	16	U	14	
110	do	14	14	U	12	
33	do	18	18	I-bar	3/4x1 1/4	1.25
33	do	16	16	do	3/4x1 1/4	1.25
110	do	14	14	do	3/4x1 1/4	1.25
33	do	16	16	(1)		
33	do	14	14	(1)		
33	Bulge	14	16	None		
55	do	13	14	do		

† Rolled or swaged in.

9. (e) Openings over 2.3" diameter not permitted. Threads for plug or cap must be 8 or less per inch when over 3/4" standard pipe size.

11. (a) ICC—5G. This mark shall be understood to certify that the container complies with all specification requirements.

13. (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.

SPECIFICATION 5H—STEEL BARRELS OR DRUMS—LEAD LINED

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

6. *Chime reinforcement.* Containers with flanged head secured to body to have chime reinforcement adequate for its protection.

7. (a) *Lining.* Required; of lead, at least 3/32" thick, completely bonded to the steel.

9. (e) Openings over 2.3" diameter not permitted. Threads for plug or cap must be 8 or less per inch when over 3/4" standard pipe size.

11. (a) ICC—5H. This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 5J

Canceled. Replaced by 17C.

SPECIFICATION 5K—NICKEL BARRELS OR DRUMS

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

3. *Composition.* Material must be, except for rolling hoops and chime reinforcements, nickel at least 99.0% pure.

4. This paragraph does not apply.

11. (a) ICC—5K. This mark shall be understood to certify that the container complies with all specification requirements.

13. *Type tests.* Samples, taken at random and closed as for use, shall withstand prescribed tests without leakage. Tests to be made of each type and size by each company starting production and to be repeated every 12 months. Samples last tested to be retained until further tests are made. The type tests are as follows: (See spec. 5A.)

SPECIFICATION 5X—STEEL DRUMS—ALUMINUM LINED

[Removable head containers not authorized]

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

7. (a) *Lining.* Required; of aluminum 99% pure; thickness 0.12"; all seams welded. It shall have reasonably good fit in outside drum and be arranged so that extensive movement therein will be prevented.

9. (a) *Closures.* Adequate to prevent leakage; shall be located between rolling hoops; aluminum plate gasket, at least 0.10" thick, is required.

9. (c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 5 or more complete threads; two 1/16" drainage holes are allowed. Plug, or cap, must have sufficient length of thread to engage 5 threads when screwed home without gasket. Threaded cap closures, 3 full threads engaged are also authorized.

9. (e) Openings over 2.3" diameter not permitted. Threads for plug or cap must be 8 or less per inch when over 3/4" standard pipe size.

11. (a) ICC—5X. This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 6A—STEEL BARRELS OR DRUMS†

† Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (a), (b), and (c), and 6. These paragraphs do not apply.

7. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Minimum Thickness in the black (gage, U. S. standard)		Rolling hoops		
			Body sheet	Head sheet	Type	Minimum	
						Size (gage or inch)	Weight (pounds per foot)
5 to 10	160	St. side	16	16	None		
5 to 30	480	do	14	14	I-bar	3/4x1 1/4	1.25
5 to 55	880	do	12	12	do	1x1 1/4	1.60
5 to 33	480	Bulge	13	14	None		
5 to 55	880	do	12	12	do		

9. (a) *Closures.* Adequate to prevent leakage; gaskets required. Closures must be of screw-thread type or secured by positive fastening.

9. (c), (d), and (e) These paragraphs do not apply.

11. (a) ICC—6B***; stars to be replaced by the *authorized gross weight* (for example, ICC—6A880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

13. (a) Test by dropping, filled with dry, finely powdered material to the *authorized gross weight*, from height of 4 feet onto solid concrete so as to strike diagonally on top chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 30 pounds per square inch sustained for 5 minutes. Leakage through closure shall not constitute failure.

SPECIFICATION 6B—STEEL BARRELS OR DRUMS†

† Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (a), (b), and (c), and 6. These paragraphs do not apply.

7. Parts and dimensions. As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
					Type	Minimum	
			Body sheet	Head sheet		Size (gage or inch)	Weight (pounds per foot)
5 to 10	160	St. side	18	18	None		
5 to 30	480	do	16	16	U	14	
5 to 55	880	do	14	14	U	12	
5 to 30	480	do	16	16	1-bar	3/4x1 1/4	1.25
5 to 55	880	do	14	14	do	3/4x1 1/4	1.25
5 to 110	1,760	do	12	12	do	1x1 1/2	1.60
5 to 33	480	Bilge	15	16	None		
5 to 55	880	do	13	14	None		

9. (a) Closures. Adequate to prevent leakage; gaskets required. Closures must be of screw-thread type or secured by positive fastening.

9. (c), (d), and (e). These paragraphs do not apply.

11. (a) ICC—6B***; stars to be replaced by the authorized gross weight (for example, ICC—6B880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

13. (a) Test by dropping, filled with dry, finely powdered material to the authorized gross weight, from height of 4 feet onto solid concrete so as to strike diagonally on top chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 30 pounds per square inch sustained for 5 minutes. Leakage through closure shall not constitute failure.

SPECIFICATION 6C—STEEL BARRELS OR DRUMS†

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (a), (b), and (c), and 6. These paragraphs do not apply.

7. Parts and dimensions. As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
					Type	Minimum	
			Body sheet	Head sheet		Size (gage or inch)	Weight (pounds per foot)
5 to 10	80	St. side	22	22	None		
5 to 30	160	do	20	20	do		
5 to 30	480	do	18	18	U	16	
5 to 55	880	do	16	16	U	14	
5 to 110	1,760	do	14	14	U	12	
5 to 30	480	do	18	18	1-bar	3/4x1 1/4	1.25
5 to 55	880	do	16	16	1-bar	3/4x1 1/4	1.25
5 to 110	1,760	do	14	14	1-bar	1x1 1/2	1.60
5 to 33	480	Bilge	16	18	None		
5 to 55	880	do	15	16	do		

9. (a) Closures. Adequate to prevent leakage; gaskets required. Closures must be of screw-thread type or secured by positive fastening.

9. (c), (d), and (e). These paragraphs do not apply.

11. (a) ICC—6C***; stars to be replaced by the authorized gross weight (for example, ICC—6C880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

13. (a) Test by dropping, filled with dry, finely powdered material to the authorized gross weight, from height of 4 feet onto solid concrete so as to strike diagonally on top chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 30 pounds per square inch sustained for 5 minutes. Leakage through closure shall not constitute failure.

SPECIFICATIONS 6D, 6E, 6F, 6G, AND 6H

Canceled. Replaced by 37D, 37E, 37F, 37G, and 37H.

SPECIFICATION 6J—STEEL BARRELS AND DRUMS†

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (a), (b), and (c), and 6. These paragraphs do not apply.

7. Parts and dimensions. As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
					Type	Minimum	
			Body sheet	Head sheet		Size (gage or inch)	Weight (pounds per foot)
5 to 30	260	St. side	19	19	(*)		
5 to 55	480	do	18	18	(*)		
5 to 55	880	do	16	16	U	14	
5 to 55	880	do	16	16	1-bar	3/4x1 1/4	1.25
5 to 33	480	Bilge	16	18	None		
5 to 55	880	do	15	16	do		

*Rolled or swaged in hoops.

9. (a) Closures. Adequate to prevent leakage; gaskets required. Closures must be of screw-thread type or secured by positive fastening.

9. (c), (d) and (e) These paragraphs do not apply.

11. (a) ICC—6J***; stars to be replaced by the authorized gross weight (for example, ICC—6J880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

13. (a) Test by dropping, filled with dry, finely powdered material to the authorized gross weight, from height of 4 feet onto solid concrete so as to strike diagonally on top chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) and 14. These paragraphs do not apply.

SPECIFICATION 8—STEEL CYLINDERS WITH APPROVED POROUS FILLING FOR ACETYLENE

General

1. Compliance. Required in all details.

2. (a) Type. Seamless except that the following is authorized: Longitudinal seam if forge lap welded; attachment of heads by welding or by brazing by dipping process; welded circumferential body seam if cylinder has no longitudinal seam.

(b) *Service pressure**. 250 pounds per square inch.

*Service pressure limits the use of the cylinder to 250 pounds per square inch at 70° F.

Inspection and Report

3. *Inspection by whom and where.* By competent and disinterested inspectors except that for cylinders made in the United States of America interested inspectors are also authorized; chemical analyses and tests, as specified, to be made within limits of the United States.

(a) *Duties of shell inspector.* Inspect all material and reject any not complying with requirements; for cylinders made by billet piercing process, billets to be inspected after nick and cold break.

Require certified chemical analyses of steel used, signed by manufacturer thereof; also verify by check analyses of samples taken from each heat or from 1 out of each lot of 200 or less plates, shells, or tubes used.

Verify compliance of cylinder shells with all shell requirements; inspect inside before closing in both ends; verify heat treatment as proper; obtain all samples for all tests and for check analyses; witness all tests; verify threads by gauge; report volumetric capacity and minimum thickness of wall noted.

Prepare report on manufacture of steel shells in form prescribed in specification 3A as modified for acetylene cylinders. Furnish one copy to manufacturer, one copy to Bureau of Explosives, and three copies to the company that is to complete the cylinders.

(b) *Duties of inspector of completed cylinders.* Determine porosity of filling and tare weights; verify compliance of marking with prescribed requirements; obtain necessary copies of steel shell reports prescribed in paragraph 3 (a); render complete reports, as prescribed in paragraph 20, to the purchaser, to the Bureau of Explosives, and to the company that has completed the manufacture of the cylinders.

Material

4. *Steel.* Open-hearth or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050.

5. *Identification of steel.* Required; any suitable method except that plates and billets for hot-drawn cylinders shall be marked with heat number.

6. *Defects.* Material with seams, cracks, laminations, or other injurious defects, not authorized.

Construction

7. *Manufacture.* By best appliances and methods; dirt and scale to be removed as necessary to afford proper inspection; no defect acceptable that is likely to weaken the finished cylinder appreciably; reasonably smooth and uniform surface finish required.

8. Exposed bottom welds on cylinders over 18" long must be protected by foot rings.

9. *Heat treatment.* The completed cylinders, or body and heads thereof completed up to point of assembly, must be uniformly heat treated prior to tests.

10. *Openings.* Standard taper pipe threads required; length not less than as specified for American Standard pipe threads; tapped to gauge; clean cut, even, and without checks.

11. *Safety devices and protection for valves, safety devices, and other connections,* if applied. Must be as required by the Interstate Commerce Commission's regulations that apply. (See sec. 303 (p) (7) (a), and 303 (p) (8).)

Cylinder Tests

12. (a) *Hydrostatic test.* By water jacket, or other suitable method, operated so as to obtain accurate data. Pressure gauge must permit reading to accuracy of 1%. Expansion gauge must permit reading of total expansion to accuracy either of 1% or 0.1 cubic centimeter.

(b) Pressure must be maintained for 30 seconds and sufficiently longer to insure complete expansion. Any internal pressure applied after heat treatment and previous to the official test must not exceed 90% of the test pressure nor be within 100 pounds thereof.

(c) Permanent volumetric expansion must not exceed 10% of total volumetric expansion at test pressure.

(d) One cylinder out of each lot of 200 or less must be hydrostatically tested to at least 750 pounds per square inch. Cylinders not so tested must be examined under pressure of between 500 and 600 pounds per square inch and show no defect. If hydrostatically tested cylinder fails, each cylinder in the lot may be hydrostatically tested and those passing are acceptable.

13. (a) *Physical test.* Required on 2 specimens cut longitudinally from 1 cylinder or part thereof taken at random out of each lot of 200 or less, after heat treatment.

(b) Specimens must be: Gauge length 8" with width not over 1½"; or, gauge length 2" with width not over 1½"; *Provided*, That gauge length at least 24 times thickness with width not over 6 times thickness is authorized when cylinder wall is not over ⅜" thick.

(c) Yield point must be taken as the stress in pounds per square inch corresponding to a strain of at least 0.003" per inch determined under cross head speed not over ⅛" per minute; the zero point of strain measurement shall be taken at approximately 12,000 pounds per square inch: *Provided*, That "drop of the beam" method is authorized for steel which has a "sharp kneed" stress-strain diagram.

(d) Yield point shall not exceed 70% of the ultimate strength. Elongation must be at least 40% in 2" or 20% in other cases.

14. *Leakage test.* By interior air or gas pressure not less than the service pressure; leakers must be rejected. Required only for cylinders with bottoms closed in by spinning.

Porous Filling

15. (a) Cylinders must be completely filled with an approved porous material, uniform in quality, thoroughly dry, free from voids, and of such structure as to make impossible any disintegration or sagging when wet with solvent. Filling material must have been tested with satisfactory results under supervision of the Bureau of Explosives.

(b) Porosity of filling must be 80% or less. A cylinder taken at random from each lot of 200 or less cylinders must be tested for porosity. Should test cylinder fail, test of each cylinder of the lot is authorized, cylinders passing test to be acceptable.

(c) For filling that is molded and dried before insertion in cylinders, porosity test may be made on sample block taken at random from material to be used.

Rejected Cylinders

16. Reheat treatment authorized; subsequent thereto, acceptable cylinders must pass all prescribed tests. Repair by welding is authorized.

Tare Weight

17. (a) Tare weight here referred to shall be the combined weight of cylinder proper, porous filling, valve, and solvent, but without removable cap.

(b) Determinations of amount of solvent shall be based upon a solvent having specific gravity of 0.796 at 15.5° C. Maximum amount of solvent at 60° F. shall be determined as follows:

(1) For filling material having porosity from 75 to 80 percent, inclusive: Solvent 40 percent by volume of water capacity of cylinder shell.

(2) For porosity of 70 percent up to but not including 75 percent: Solvent 37.5 percent as above.

(3) For porosity of 65 percent up to but not including 70 percent: Solvent 35 percent as above.

Marking

18. *On each cylinder.* By stamping plainly and permanently on or near the shoulder or top head, as follows:

(a) ICC—8.

(b) A serial number and an identifying symbol (letters) grouped** above or below the ICC mark. The symbol and numbers must be those of purchaser or user. The symbol must be registered with the Bureau of Explosives; duplications unauthorized.

**Variation in location authorized only when necessitated by lack of space.

Example:

ICC—8
1234
XY

(c) Date of test (such as 5—37 for May, 1937), so placed that dates of subsequent tests can be easily added.

(d) Tare weight of cylinder in pounds and ounces.

(e) Cylinders, not completed, when delivered must each be marked for identification of each lot of 200 or less.

19. *Size of marks.* At least $\frac{1}{8}$ " high for cylinders less than 4" inside diameter and at least $\frac{1}{4}$ " high for larger cylinders.

Report

20. Report required must be clear and legible and in the following form:

(Place) _____
(Date) _____

Final report. For completed steel cylinders with approved porous filling for acetylene.

Manufactured for _____
Location at _____
Steel shells manufactured by _____
Location at _____
Cylinders completed by _____
Location at _____
Consigned to _____
Location at _____
Quantity _____
Size _____ inches outside diameter by _____ inches long.
Marks are stamped into _____ as follows: (head-shoulder) _____
specification ICC—8.
Serial numbers _____ to _____ inclusive.
Identifying symbol (registered) _____
Inspector's mark (if applied) _____
Test date _____
Other marks (if any) _____

Application of prescribed marks, as reported above, and location thereof were verified.

Each cylinder was filled with porous filling material consisting of _____ in the form of _____.

The porosity of the filling is between _____ and _____ percent as determined by tests made by the _____.

_____ company whose report has been found satisfactory and is on file.

The tare weight of each cylinder was determined and a record thereof is attached hereto.

Each cylinder has been equipped with safety devices _____.

A certified report of manufacture and test of the steel shells is attached hereto.

I hereby certify that, subject to the acceptability of the reports covering the steel shells, all of these cylinders proved satisfactory in every way and comply with the requirements of the Interstate Commerce Commission Specification No. 8.

Signed _____
(Inspector)

Special

21. *Additional type.* For cylinders contracted for by the United States Navy, the prescribed limitations of carbon content, yield point, and elongation of steel are hereby waived for seamless cylinders, otherwise complying with this specification, under the following conditions:

(a) Minimum wall thickness must be such that the wall stress under interior pressure of 1,000 pounds per square inch will not exceed 18,000 pounds per square

inch when calculated under paragraph 9 (b) of specification 3A.

(b) The elongation of the steel must be at least 15 percent in 8".

(c) The test pressure under paragraph 12 of this specification must be at least 1,000 pounds per square inch.

(d) The cylinders must pass a flattening test, as prescribed in paragraph 14 of specification 3A; flattening required, without cracking, to 6 times wall thickness. Flattening must be carried on until crack occurs or until walls are metal to metal.

(e) The cylinders must neither be marked ICC—8 nor be fully accepted by the inspector until after having passed without shattering a test consisting of subjecting 1 cylinder out of each lot of 200 or less, in fully charged condition, to the impact of a 1.1" projectile at velocity of at least 2,700 feet per second.

(f) Reports of manufacture and tests of the cylinder shells must include the following additional information: Chemical analysis data on manganese, chromium, molybdenum, and other alloy materials present, if any; definite statement as to the heat treatment used; distance between outside surfaces of the flattened cylinders when the first crack occurs; and copy of letter signed by an official of the United States Navy stating that the cylinders have successfully passed the prescribed projectile impact test and have been accepted.

SPECIFICATION 10A—WOODEN BARRELS AND KEGS (TIGHT)**General**

1. *Compliance.* Required in all details.

Material

2. *Staves and heading.* To be of white oak, chestnut oak, red oak, black cherry, or Douglas fir; quarter sawed with the grain, from straight-grained timber, so no annual ring shall slope over half the thickness of stave or head; thoroughly kiln dried, moisture content 7% to 11%; free from rotten sap, checks, pitch pockets, cat faces, seed and worm holes in excess of 15 in one container, and other defects that show through on both sides.

3. *Hoops.* To be of cooperage-grade hoop steel.

Construction

4. *Staves.* To be sawed evenly and circular; croze center to be within $\frac{1}{8}$ " of end of stave; stave end to have $\frac{1}{8}$ " free from bevel.

5. *Heading.* Of uniform thickness and properly circled; planed on outside and properly jointed and glued, or doweled and flagged; dowel diameter not over $\frac{5}{12}$ thickness of head.

6. (a) *The barrel.* Stave joints reasonably flush on outside. Lathing is forbidden.

(b) Worm and seed holes to be plugged; over 15 not authorized in one container.

7. (a) *Parts required and dimensions.* As follows (10% excess capacity authorized):

(b) *Staves, when finished on outside:*

Capacity of container, not over	Maximum			Minimum	
	Length	Width	Bilge circle	Staves	Thickness
Gallons	Inches	Inches	Inches	Number	Inch
50	34	6	84	19	$\frac{3}{4}$
30	30	5	74	16	$\frac{5}{8}$
15	24	$4\frac{1}{2}$	54	14	$\frac{9}{16}$
10	22	$4\frac{1}{4}$	50	12	$\frac{3}{8}$
5	18	4	40	10	$\frac{1}{2}$

Foregoing thicknesses are of staves finished on one side. One-sixteenth inch must be added for unfinished staves. Foregoing maximum lengths are authorized to be increased 6 percent or less, provided the thickness of stave is increased at least one-sixteenth inch for each increase of 1 inch in length or fraction thereof.

(c) *Heading, after planing:*

Capacity of container, not over	Maximum		Minimum	
	Pieces	Diameter	Thickness	Width
Gallons	Number	Inches	Inch	Inches
50	6	21	1	$2\frac{1}{2}$
30	6	18	$1\frac{1}{16}$	$2\frac{1}{2}$
15	5	14	$1\frac{1}{16}$	$2\frac{1}{2}$
10	5	13	$\frac{5}{8}$	2
5	4	11	$\frac{5}{8}$	2

(d) *Hoops, number and size:*

Capacity of container, not over (gallons)	Minimum number of hoops	Minimum size of hoops (inches in width and Birmingham gage)							
		Head		1st quarter		2d quarter		Bilge	
		Inch	Gage	Inch	Gage	Inch	Gage	Inch	Gage
50	8	$1\frac{3}{4}$	16	$1\frac{1}{2}$	18	$1\frac{1}{2}$	18	$1\frac{3}{4}$	17
30	6	$1\frac{1}{2}$	17	$1\frac{1}{4}$	19	-----	-----	$1\frac{1}{2}$	18
15	6	$1\frac{1}{4}$	18	$1\frac{1}{2}$	19	-----	-----	$1\frac{1}{4}$	19
10	6	$1\frac{3}{4}$	19	1	19	-----	-----	$1\frac{1}{4}$	19
5	6	$1\frac{3}{8}$	19	1	19	-----	-----	1	19

Closures

8. *Closures.* To be such as to prevent leakage in transit. Bung holes in staves must be not over 2" diameter.

Lining

9. *Lining.* To be as prescribed in the regulations or otherwise appropriate for the contents.

Tests

10. *Type test.* Sample container at least 2 days old shall not increase more than 10% on diameter of head when all hoops above bilge are removed.

11. *Leakage test.* Required for each lined container; by pressure at time of sizing or air pressure of at least 5 pounds per square inch; leakers to be repaired and retested.

Marking

12. *On each container.* By the maker. By hot branding iron on head as follows:

(a) ICC—10A. This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

(c) Date of manufacture (for example, 7-28 for July, 1928) located near the maker's mark.

13. *Size of markings* (minimum). $\frac{3}{4}$ " high or over 30-gallon size, $\frac{1}{2}$ " for others.

SPECIFICATION 10B—WOODEN BARRELS AND KEGS

Containers must comply with specifications 10A except as follows (paragraph references are to specification 10A):

7. (b) Staves, when finished on outside:

Capacity of container, not over	Maximum			Minimum	
	Length	Width	Bilge circle	Staves	Thickness
<i>Gallons</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Number</i>	<i>Inches</i>
50	34	6	84	19	$1\frac{1}{16}$
30	30	5	74	16	$\frac{5}{8}$
15	24	$4\frac{1}{2}$	54	14	$1\frac{1}{16}$
10	22	$4\frac{1}{4}$	50	12	$\frac{1}{2}$
5	18	4	40	10	$\frac{1}{2}$

Foregoing thicknesses are of staves finished on one side. One-sixteenth inch must be added for unfinished staves. Foregoing maximum lengths are authorized to be increased 8 percent or less, provided the thickness of stave is increased at least one-sixteenth inch for each increase of 1 inch in length or fraction thereof.

7. (c) Heading, after planing:

Capacity of container, not over	Maximum		Minimum	
	Pieces	Diameter	Thickness	Width
<i>Gallons</i>	<i>Number</i>	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>
50	6	21	$\frac{3}{4}$	$2\frac{1}{2}$
30	6	18	$\frac{5}{8}$	$2\frac{1}{2}$
15	5	14	$\frac{9}{16}$	2
10	5	13	$\frac{1}{2}$	2
5	4	11	$\frac{1}{2}$	2

7. (d) Hoops, number and size:

Capacity of container, not over (gallons)	Minimum number of hoops	Minimum size of hoops (inches in width and Birmingham gage)							
		Head		1st quarter		2d quarter		Bilge	
		Inch	Gage	Inch	Gage	Inch	Gage	Inch	Gage
50	8	$1\frac{3}{4}$	17	$1\frac{1}{2}$	18	$1\frac{1}{2}$	18	$1\frac{3}{4}$	17
30	6	$1\frac{1}{2}$	18	$1\frac{1}{4}$	19	—	—	$1\frac{1}{2}$	18
15	6	$1\frac{1}{4}$	19	$1\frac{1}{8}$	19	—	—	$1\frac{1}{4}$	19
10	6	$1\frac{1}{8}$	19	1	19	—	—	$1\frac{1}{8}$	19
5	6	1	19	1	19	—	—	1	19

12. (a) ICC—10B. This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 10C—WOODEN BARRELS AND KEGS

Containers must comply with specification 10A except as follows (paragraph references are to specification 10A):

No. 242—5

7. (b) Staves, when finished on outside:

Capacity of container, not over	Maximum			Minimum	
	Length	Width	Bilge circle	Staves	Thickness
<i>Gallons</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Number</i>	<i>Inch</i>
50	34	6	84	19	$1\frac{1}{16}$
30	30	5	74	16	$\frac{5}{8}$
15	24	$4\frac{1}{2}$	54	14	$1\frac{1}{16}$
10	22	$4\frac{1}{4}$	50	12	$\frac{1}{2}$
5	18	4	40	10	$\frac{1}{2}$

Foregoing thicknesses are of staves finished on one side. One-sixteenth inch must be added for unfinished staves. Foregoing maximum lengths are authorized to be increased 6 percent or less, provided the thickness of stave is increased at least one-sixteenth inch for each increase of 1 inch in length or fraction thereof.

7. (c) Heading, after planing:

Capacity of container, not over	Maximum		Minimum	
	Pieces	Diameter	Thickness	Width
<i>Gallons</i>	<i>Number</i>	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>
50	6	21	$\frac{3}{4}$	$2\frac{1}{2}$
30	6	18	$\frac{5}{8}$	$2\frac{1}{2}$
15	5	14	$\frac{9}{16}$	2
10	5	13	$\frac{1}{2}$	2
5	4	11	$\frac{1}{2}$	2

7. (d) Hoops, number and size:

Capacity of container, not over (gallons)	Minimum number of hoops	Minimum size of hoops (inches in width and Birmingham gage)							
		Head		1st quarter		2d quarter		Bilge	
		Inch	Gage	Inch	Gage	Inch	Gage	Inch	Gage
50	6	$1\frac{3}{4}$	17	$1\frac{1}{2}$	18	—	—	$1\frac{3}{4}$	17
30	6	$1\frac{1}{2}$	18	$1\frac{1}{4}$	19	—	—	$1\frac{1}{2}$	18
15	6	$1\frac{1}{4}$	19	$1\frac{1}{8}$	19	—	—	$1\frac{1}{4}$	19
10	6	$1\frac{1}{8}$	19	1	19	—	—	$1\frac{1}{8}$	19
5	6	1	19	1	19	—	—	1	19

12. (a) ICC—10C. This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 11A—WOODEN BARRELS AND KEGS (SLACK)

General

1. *Compliance*. Required in all details.

2. *Classification of woods*. As follows:

GROUP A

Oak.
Beech.
Maple.
Elm.
Red Gum.

Sycamore.
Hackberry.
Birch.
Douglas fir.
White ash.

GROUP B

Cottonwood.
Basswood.
Tupelo gum.

Pine.
Chestnut.
Willow.

Material

3. (a) *Staves*. Of Group A woods, No. 1 grade, kiln dried; of uniform thickness, well equalized, circled, and jointed; minimum thickness 5 staves to $1\frac{1}{8}$ "; maximum width $5\frac{1}{2}$ ".

(b) To be tongued and grooved.

4. *Heading*. To be No. 1 grade, kiln dried, uniform thickness, turned true to size, dressed on one side, and jointed and glued.

5. *Metal hoops*. Of cooperage-grade hoop steel with one edge beaded or rolled.

6. *Wooden hoops*. No. 1 grade coiled elm at least $\frac{3}{32}$ " x $\frac{5}{32}$ " x $1\frac{1}{8}$ "; ends joined by 1 staple and 2 additional nails or staples clinched on the inside.

Construction

7. *Parts and dimensions*. As follows:

Authorized net weight (pounds)	Heading				Staves	Metal hoops****	
	Diameter not over*** (inches)	Thickness at least		Number of pieces not over	Length not over*** (inches)	Width (inch) by Birmingham wire gage (minimum)	
		Wood group				Head	Quarter ** and bilge
		A (inch)	B (inch)				
350	16	$\frac{1}{2}$	$\frac{1}{2}$	3	28	1½x23	1½x23
450	16	$\frac{1}{2}$	$\frac{5}{8}$	3	28	1½x23	1½x23
600	16	$\frac{5}{8}$	$\frac{5}{8}$	3	28	1½x23	1½x23
350	17	$\frac{1}{2}$	$\frac{1}{2}$	4	30	1½x23	1½x23
450	17	$\frac{1}{2}$	$\frac{5}{8}$	4	30	1½x23	1½x23
600	17	$\frac{5}{8}$	$\frac{5}{8}$	4	30	1½x23	1½x23
350	19	$\frac{1}{2}$	$\frac{1}{2}$	5	34	1½x22	1½x23
450	19	$\frac{1}{2}$	$\frac{5}{8}$	5	34	1½x22	1½x23
600	19	$\frac{5}{8}$	$\frac{5}{8}$	5	34	1½x22	1½x23
350	21	$\frac{1}{2}$	$\frac{1}{2}$	5	34	1½x21	1½x23
450	21*	$\frac{1}{2}$	$\frac{5}{8}$	5	34	or 2x22	1½x23
600	21*	$\frac{5}{8}$	$\frac{5}{8}$	5	34	1½x21 or 2x22	1½x23

*Head battens required; at least $\frac{1}{4}$ "x $3\frac{1}{4}$ "; ends rounded to fit chime; securely nailed to heads.

**Quarter hoops not required for 350 pounds authorized net weight.

***Tolerance of $\frac{1}{8}$ " authorized.

****Wooden hoops authorized: 8 for 350 pounds net; 10 for 450 pounds net; 12 for 600 pounds net.

8. *Head liners*. Required as provided in paragraph 13.

Marking

9. *On each container*. To be applied by the maker on top head as follows:

(a) ICC—***; stars to be replaced by specification number under which container was made, followed by the *authorized gross weight* (authorized net weight plus tare weight; for example, ICC—11A475, ICC—11B370, etc.). This mark shall be understood to *certify* that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

10. *Size of marking* (minimum). $\frac{3}{4}$ " high for head diameter over 17"; $\frac{1}{2}$ " high for others.

Closing

11. *Heads*. To fit well in croze and be secured by nails or staples at 8" spacing through hoops into heads.

12. *Head battens* (when required by par. 7). To be fastened at each end by $\frac{1}{2}$ " metal strapping nailed over chime and under hoops.

13. *Head liners*. To extend across grain, circle at least $\frac{1}{2}$ of circumference, and be nailed or stapled at 5" intervals. Required for containers with wooden hoops when net weight of contents is to exceed 250 pounds.

14. *Quarter and bilge hoops*. To be redriven and fastened by 4 fasteners for each hoop; puncture fastening at 8" intervals authorized for metal hoops.

SPECIFICATION 11B—WOODEN BARRELS AND KEGS (SLACK)

Containers must comply with specification 11A except as follows (paragraph references are to specification 11A):

3. (a) *Staves*. Of Group A woods, No. 1 grade, kiln dried; of uniform thickness, well equalized, circled, and jointed; minimum thickness 5 staves to $1\frac{1}{8}$ "; maximum width $5\frac{1}{2}$ ". Group B woods authorized for 24" or shorter staves.

3. (b) This paragraph does not apply.

4. *Heading*. To be No. 1 grade, kiln dried, uniform thickness, turned true to size, dressed on one side, and jointed.

SPECIFICATION 12B—FIBERBOARD BOXES General

1. *Compliance*. Required in all details.

2. (a) *Definitions*. Terms such as "200-pound test" mean minimum strength, Mullen or Cady test.

(b) "Joints" are where edges of parts of box, except recessed flanged heads, are connected together in setting up the box. Generally done by box maker.

(c) "Seams" are where edges of parts of box are visible, except joints, when box is closed.

Inside Packing

3. *Liquids or solids in glass or earthenware*. Must be packed with linings, partitions, wrappers, excelsior, straw, or other material, sufficient to afford adequate protection against breakage or damage. *Unauthorized packages* are: Those over 65 pounds gross weight; those with any inside container over 1-gallon capacity; those with more than 4 inside containers exceeding 5-pints capacity each.

4. *Liquids in metal cans*. Must be packed as necessary to afford adequate protection against breakage or damage. *Unauthorized packages* are: Those with any inside container over 1-gallon capacity.

5. *Solids in inside containers other than glass or earthenware*. Must be packed as necessary to afford adequate protection against breakage or damage.

6. *Mixed shipments* (inside containers of different sizes, or solids and liquids in same outside container: Must be

packed as prescribed for articles in glass or earthenware (par. 3).

Materials

7. *Classification of board*. Fiberboard is hereby classified by strength* of completed board as in first column of the following table; thicknesses and strengths* specified in the table are the minimums authorized.

Classified strength* of completed board	Solid fiberboard	Facings for corrugated fiberboard			
		Double-faced		Double-wall	
		Thickness	Strength*	Thickness	Strength*
175	0.060"	0.016"	85	0.016"	85**
200	.080"	.016"	100	.016"	100
275	.100"	.030"	135	.016"	85
325	.100"	.016"	†	.016"	†
350	.120"	.016"	†	.016"	†
375	.100"	.016"	†	.016"	†
400	.100"	.016"	†	.016"	†
450	.100"	.030"	135	.016"	†

*Mullen or Cady test (minimum).

**Non-test center facing acceptable.

†As necessary to secure prescribed strength of complete board but not less than 85.

8. *Solid fiberboard*. To be 3-ply or more; both outer plies waterproofed. Each ply at least 0.016".

9. *Corrugated fiberboard*. Both outer facings waterproofed; corrugated sheets at least 0.009" thick; all parts securely glued together throughout all contact areas. Each facing at least 0.016".

10. *Stitching staples*. Of steel wire at least $\frac{3}{32}$ x 0.019", or equal cross section, formed into staples about $\frac{1}{16}$ " wide.

11. *Tape*. Coated with animal glue at least equal to No. 1 $\frac{1}{4}$ Peter Cooper standard. Cloth tape of strength, across the width, at least 70 units, Elmendorf test. Sisal tape of 2 sheets of No. 1 Kraft paper, total weight 80 pounds per ream (480 sheets, 24" x 36"); sheets to be combined with asphalt and reinforced by unspun sisal fibers completely embedded in the asphalt and extending across the tape.

Test of Board

12. *Acceptable board*. Must have prescribed strength, Mullen or Cady test, under test as follows:

(a) Clamp board firmly in machine and turn wheel thereof at constant speed of approximately 2 revolutions per second.

(b) Six punctures required, 3 from each side; all results but one must show prescribed strength.

(c) Board failing may be retested by making 24 punctures, 12 from each side; when all results but 4 show prescribed strength it is acceptable.

(d) For corrugated fiberboard double-pop tests may be disregarded.

Construction

13. *Types of box authorized*. To be of solid or corrugated fiberboard. Any type

in which the board extends across the entire length of each edge of the box where such edge is over 3" long; also corrugated fiberboard boxes with one edge taped as required by par. 16 (b); also 3-piece type of solid fiberboard boxes with recessed heads.

14. *Inside packing and size limits*. As prescribed in paragraphs 3 to 6 and 23.

15. *Forming*. Parts must be cut true to size and so creased and slotted as to fit closely into position without cracking, surface breaks, separation of parts outside of crease, or undue binding.

16. *Joints*. As follows:

(a) For solid and corrugated fiberboard: Lapped $1\frac{1}{2}$ " except as in paragraph 17; stitched at $2\frac{1}{2}$ " intervals and within 1" of each end of joint; body joint must be double-stitched (2 parallel stitches) at each end of joint over 18" long.

(b) For corrugated fiberboard only: One butt joint taped is authorized; 3" tape required for boxes over 30 pounds authorized gross weight and 2" tape for others.

17. *Flanged heads*. Must have 4 flanges, at least 1" long above fillet, on each head. Recessed flanged heads not authorized for boxes of corrugated fiberboard.

18. *Seams which are to be stitched*. Overlap, if any, required to be at least $1\frac{1}{2}$ " except as in par. 17.

19. (a) *Flap closures*. Fill-in pieces between inner flaps are required when necessary to prevent an opening in a seam.

(b) If to be closed by adhesive: Each inner flap must cover at least $\frac{1}{3}$ of face; inner flaps must butt or fill-in pieces must be used; outer flaps must butt or have full overlap.

(c) Single-flap closures are authorized for boxes with one dimension not over 2"; each flap must be scored and form one of the small faces of the box and lap at least 5" on one of the largest faces.

20. *Linings* (when prescribed). Of 1-piece to extend around 4 faces with joint at center of 1 face and with 4 flanges, at least $1\frac{1}{2}$ " long, on each end (corners may be mitered) to bend over the other 2 faces; also 2 pads to cover the other 2 faces. Pads may be omitted if closing flaps afford 3 thicknesses throughout face. For boxes with 1 dimension not over 3", one of the widest flanges may be lengthened to cover entire face and lap 6" on the adjoining face and the other flanges and the pads may then be omitted.

21. *Triple and double slide box*. Joints of all sides must be taped (par. 11) or stitched.

22. *Telescope type box* (including types with cover or cap). Sections must be of equal depth or with 3" overlap.

23. (a) *Authorized gross weight* (when packed) and parts required. As follows:

Authorized gross weight (pounds)	Strength of fiberboard (minimum) Mullen or Cady test							
	Solid board			Double-faced corrugated		Double-wall corrugated		
	Box	Lining**	Heads*	Box	Lining**	Box	Lining**	
15	175	-----	†	175	-----	200	-----	
30	200	-----	275	200	-----	200	-----	
40	275	-----	350†	275	-----	200	-----	
55	325	-----	†	325	-----	275	-----	
65	375	-----	†	375	-----	275	-----	
	275	175	350†	200	200	275	-----	

*For recessed heads when used. In other cases same as for box.

**As prescribed in par. 20. A complete box is acceptable in place of the lining.

†Recessed heads not authorized in any case.

‡At least 0.120" thick.

(b) Triple slide boxes authorized for gross weights as follows: Of board at least 175-pound test for 40 pounds; of board at least 200-pound test for 65 pounds.

Closing for Shipment

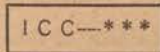
24. (a) By coating with adhesive the entire contact surfaces of closing flaps and fill-in pieces, or the inner slides of double or triple slide boxes, or the covers of telescope type boxes. For single-flap closures as authorized for boxes with one dimension not over 2", the flaps must be fastened to the body with adhesive.

(b) Or, by stitching at 2½" intervals along all seams (one 5" space allowed when necessary to permit use of stitching device).

(c) When metal straps are specified, boxes must be strapped with the required number; size at least ⅝" x 0.015"; one lengthwise and others at right angles thereto.

Marking

25. (a) On each container. Symbol in rectangle as follows:



Stars to be replaced by specification number under which container was made followed by authorized gross weight (for example, ICC—12B40, ICC—12C65, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name and address of plant making the container; symbol (letters) authorized if recorded with the Bureau of Explosives. This mark to be located just above or below the mark specified in (a).

(c) When metal straps are prescribed, boxes must be marked "METAL STRAPS REQUIRED" (number) METAL STRAPS REQUIRED just above or below the mark specified in (a).

(d) Size of markings. At least ½" high.

26. SPECIAL BOX—Authorized only for contents in 1-gallon rectangular metal

cans. Must comply with this specification except as follows: Must be 1-piece type, of double-wall corrugated fiberboard at least 400-pound test with all three facings at least 135-pound test; to be marked "FOR 1-GAL. RECTANGULAR CANS ONLY" near the I. C. C. specification mark; authorized gross weight 84 pounds.

27. SPECIAL BOX—Authorized only for sheet pyroxylin. Must comply with this specification except as follows: Must be of board at least 275-pound test with lining at least 200-pound test all being double-faced corrugated fiberboard; 3 metal straps required (see pars. 24 and 25); authorized gross weight 90 pounds.

28. (a) SPECIAL BOX—Authorized only for sheet pyroxylin. Must comply with this specification except as follows: Must be telescope type with wooden frame between the parts that telescope; authorized gross weight 90 pounds.

(b) Frame of group 3 or 4 wood (see spec. 15A) ⅜" thick with lock corners glued.

(c) Telescoping parts of double-faced corrugated fiberboard at least 400-pound test with facings at least 0.030" thick; each part of same depth as frame; outer part to have corners overlapped and securely fastened.

(d) Four metal straps required. Glued or stitched closure not required. (See pars. 24 and 25.)

29. SPECIAL BOX—Authorized only for strike-anywhere matches. Must comply with this specification except as follows: Must be 1-piece type of double-faced corrugated fiberboard at least 350-pound test, B-flute type with at least 50 corrugations per foot, facings at least 0.020" thick corrugated sheet at least 0.009" thick of at least 60-pound test; joint to be stitched as per par. 16 (a); lining and pads not required; authorized gross weight 45 pounds.

30. SPECIAL BOX—Authorized only for motion-picture film in metal cans each containing not over 2,000 feet (approx.) of film. Must comply with this specification except as follows:

(a) For 1 can: Must be of board at least 275-pound test for a 2,000-foot film and of board at least 200-pound test for a 1,000-foot film; lining and pads not required; closure by taping with strong paper tape authorized.

(b) For more than 1 can: Must be of 1-piece type; authorized gross weight 55 pounds when made of 325-pound test board, 65 pounds when made of 375-pound test board, and 75 pounds when made of 450-pound test board; interior packing required, of fiberboard at least 175-pound test, adequate to support inside cans in center of outside container; lining and top and bottom pads not required.

SPECIFICATION 12C—FIBERBOARD BOXES

Containers must comply with specification 12B except as follows (paragraph references are to specification 12B):

23. (a) Authorized gross weight (when packed) and parts required. As follows:

Authorized gross weight (pounds)	Strength of fiberboard (minimum) Mullen or Cady test							
	Solid board			Double-faced corrugated		Double-wall corrugated		
	Box	Lining**	Heads*	Box	Lining**	Box	Lining**	
30	175	---	200	175	---	200	---	
40	200	---	275	200	---	200	---	
65	275	---	350†	275†	---	275	---	

*For recessed heads when used. In other cases same as for box.

**As prescribed in par. 20. A complete box is acceptable in place of the lining.

†Facings 0.023" thick, or inner facing 0.016" and outer facing 0.030" thick, and 135-pound test are authorized for this board.

‡At least 0.120" thick.

23. (b) Triple slide boxes of double-faced corrugated fiberboard of at least 175-pound test are also authorized for 65 pounds gross weight.

SPECIFICATION 12E—FIBERBOARD BOXES

Containers must comply with specification 12B except as follows (paragraph references are to specification 12B):

3. Liquids or solids in glass or earthenware. Not authorized.

4. Liquids in metal cans. Must be packed as necessary to afford adequate protection against breakage or damage. Bottom pad of double-wall board (may be nontest) required in all cases. Top pad or pads of double faced or double-wall board, at least 200-pound test, or equivalent protection of filling opening, required in all cases.

6. Mixed shipments (inside containers of different sizes, or solids and liquids in same outside container). Not authorized.

7 and 8. These paragraphs do not apply.

10. This paragraph does not apply. piece body with separate flanged heads.

13. Types of box authorized. One-piece body with separate flanged heads.

16. (a) Body. Each end of body must have four flanges, creased to bend over outside of body, at least 2½" long beyond crease.

16. (a) One butt joint taped is authorized; 3" tape required.

17. Flanged heads. Each head must have four flanges, one on each edge, creased to bend over outside body of the box and then under the body-flanges, of length at least 5" exclusive of creases.

18, 19 (a), (b), and (c), 20, 21, and 22. These paragraphs do not apply.

23. (a) Authorized gross weight (when packed) and parts required. Board for outside container must be corrugated fiberboard at least 400-pound test; body must be double-wall board; heads may be double-faced board. Authorized gross weight 65 pounds.

23. (b) Box is authorized only for a single square metal can, not over 5 gallons capacity.

24. (a) By applying heads with head-flanges tucked under body flanges and then fastening each head in place with a flat steel strap, at least $\frac{3}{8}$ " x 0.015", extending around the 4 sides of the body and securely sealed.

24. (b) and (c). These paragraphs do not apply.

26, 27, 28, 29, and 30. These paragraphs do not apply.

SPECIFICATION 13—METAL KEGS

General

1. *Compliance.* Required in all details.

Material

2. *Composition.* To be open-hearth or electric steel, box annealed dead soft; carbon not over 0.14%.

Construction

3. *Parts and dimensions.* As follows:

	Gross weight of kegs and contents			
	Not over 15 pounds	Not over 30 pounds ¹	Over 30 pounds but not over 75 pounds	Over 75 pounds but not over 150 pounds
Thickness of material:				
Body	30 gage	28 gage	24 gage	24 gage
Head	30 gage	28 gage	24 gage	24 gage
Width of lap for side seam	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{1}{2}$ inch
Number of corrugations in each end of body	3	3	5	7
Minimum depths of corrugations	$\frac{1}{16}$ inch	$\frac{3}{32}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch
Width of laps on body and head seams	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch
Width of laps on head for head seams	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch	$\frac{3}{16}$ inch
Head seams	Double lap	Double lap	Double lap	Single lap

¹ Smokeless powder 32 pounds gross.

NOTE: Dimensions of materials specified are minimum requirements. Gauge specified is for commercial plate United States Standard. Corrugations not required in body of kegs for gross weights not over 7 pounds.

4. *Seams.* For gross weight over 75 pounds, all seams welded, brazed, soldered, or riveted; rivets at not over 5" centers.

Closures

5. *Slide type.* Metal holder, for slide, securely fastened to head; washer of suitable material 0.025" thick; metal drop with depression to fit into bung hole and hold washer in place; metal slide to cover the foregoing. Positive fastening required between slide and slide holder to prevent leakage in transit; friction fastening not authorized.

(a) *Cap or plug type.* Metal holder, for cap or plug, securely fastened to head; metal cap or plug, with gasket when necessary to prevent sifting. Positive fastening required between cap, or plug, and holder to prevent leakage in transit; friction fastening not authorized.

Marking

6. *On each container.* By embossing on head with raised marks as follows:

(a) ICC—13. This mark shall be understood to certify that the container complies with all specification requirements.

7. *Size of markings (minimum).* $\frac{1}{2}$ " high.

Tests

8. *Type test.* Keg filled with fine, dry sand in weight equal to that of shipment must be capable of withstanding, without leakage, 4 successive drops of 4 feet on the head onto solid concrete.

Filling With Contents

9. *Lining.* Cloth bag lining required for gross weight over 32 pounds; neck of bag to be securely tied.

Additional Keg

10. *Stove-pipe keg.* Authorized only for shipments loaded by shipper and to be unloaded by consignee and for gross weight of 30 pounds. Must comply with all requirements, except paragraphs 5 and 5 (a), and also with the following:

(a) Length to be about 4 times diameter; cap (slip cover) to have snug fit over body with 3" overlap.

(b) Contents to be enclosed in double paper tubes, with pasted seams, not over 2½" diameter and made of tough Manila paper weighing at least 50 pounds per 480 sheets 24" x 36"; outside tube to be waxed. Ends of tubes to be folded and tucked between folds of tube to prevent leakage.

SPECIFICATION 14—WOODEN BOXES—NAILED

General

1. *Compliance.* Required in all details.

2. *Lumber.* White pine or wood of at least equal strength, well seasoned, commercially dry, and free from decay, loose knots, knots that would interfere with nailing, and other defects that would materially lessen the strength. Grain of wood in cleats must not cross cleat within ½ its length.

3. *Nails.* Cement coated, except as otherwise authorized, or screws of equal efficiency.

Construction of Parts

4. (a) *Ends, sides, tops, and bottoms.* Of 1-piece; or Linderman-joint glued; or tongued, grooved and glued.

(b) Tongued, grooved and glued joints in uncleated ends must also be fastened with corrugated fasteners not over 8"

apart, within 3" of each end of joint and having penetration $\frac{1}{8}$ thickness of end.

5. *Cleated ends.* Double cleated, 2 vertical and 2 horizontal. Nails staggered at 2" intervals and clinched; cement coating not required.

6. *Sides, tops, and bottoms.* Of size to extend out over cleats, if any.

7. *Lock and dovetail corners.* Glued.

8. *Parts and dimensions.* As follows:

Authorized gross weight (maximum) (Pounds)	Type of box	Thickness of lumber (minimum)				Nails (minimum size)	
		Ends (inches)	Sides (inches)	Tops and bottoms (inches)	Cleats (inches)	Into ends or cleats (penny)	Into sides (penny)
35	Lock ¹ (Corner)	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	—	5d	5d
65	Lock ¹ (Corner)	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	—	5d	5d
75	Plain	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	—	7d	5d
75	Nailed	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{2}$ x $\frac{1}{2}$	5d	—
140	Double Cleat	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	—	8d	7d
140	Plain	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	—	7d	7d
140	Lock ¹ (Corner)	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	—	7d	7d
140	Double Cleat	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{2}$ x $\frac{1}{2}$	7d	7d

¹ Or dovetail.

Setting Up Box

9. *Joints in sides and ends.* Staggered; except for ends cleated as prescribed.

10. *Tops and bottoms.* Must fit evenly on frame of box.

11. *Cleated boxes.* Sides, top, and bottom must be secured to ends by nails driven into cleats, not into end boards.

12. *Nails in each nailing edge* (minimum number). At least equal to length of edge in inches divided by 2; when number of nails is at least equal to length of edge divided by 1¾, 4d nails are authorized where 5d nails are prescribed. Exception: 8" spacing authorized for nailing tops and bottoms to sides.

Marking of Box

13. *On each box.* With letters and figures at least ½" high in rectangle as follows:

ICC—14

This mark shall be understood to certify that box complies with all specification requirements.

SPECIFICATION 15A—WOODEN BOXES—NAILED

General

1. *Compliance.* Required in all details.

2. *Closed* box.* Parts and pieces to be in close contact.

*Openings for filling device of inside container authorized if device is properly protected.

3. *Ends.* One-piece, or equivalent (see par. 5), or cleated as prescribed; joints tongued, grooved, and glued.

TABLE 3A

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	1/2	1/2	1/2	1/2	1/2	1/2
25	3/4	3/4	3/4	3/4	3/4	3/4
35	3/4	3/4	3/4	3/4	3/4	3/4
45	3/4	3/4	3/4	3/4	3/4	3/4
55	3/4	3/4	3/4	3/4	3/4	3/4
65	3/4	3/4	3/4	3/4	3/4	3/4
75	3/4	3/4	3/4	3/4	3/4	3/4
85	3/4	3/4	3/4	3/4	3/4	3/4
100	3/4	3/4	3/4	3/4	3/4	3/4
125	3/4	3/4	3/4	3/4	3/4	3/4
150	3/4	3/4	3/4	3/4	3/4	3/4
175	1	1	1	1	1	1
200	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
250	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
300	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
350	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
400	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
500	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4

TABLE 3B

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	3/4	3/4	3/4	3/4	3/4	3/4
25	3/4	3/4	3/4	3/4	3/4	3/4
35	3/4	3/4	3/4	3/4	3/4	3/4
45	3/4	3/4	3/4	3/4	3/4	3/4
55	3/4	3/4	3/4	3/4	3/4	3/4
65	3/4	3/4	3/4	3/4	3/4	3/4
75	3/4	3/4	3/4	3/4	3/4	3/4
85	3/4	3/4	3/4	3/4	3/4	3/4
100	3/4	3/4	3/4	3/4	3/4	3/4
125	3/4	3/4	3/4	3/4	3/4	3/4
150	3/4	3/4	3/4	3/4	3/4	3/4
175	1	1	1	1	1	1
200	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
250	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
300	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
350	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
400	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
500	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4

TABLE 4

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inch	Inch	Inch	Inch	Inch	Inch
15	3/4	3/4	3/4	3/4	3/4	3/4
25	3/4	3/4	3/4	3/4	3/4	3/4
35	3/4	3/4	3/4	3/4	3/4	3/4
45	3/4	3/4	3/4	3/4	3/4	3/4
55	3/4	3/4	3/4	3/4	3/4	3/4
65	3/4	3/4	3/4	3/4	3/4	3/4
75	3/4	3/4	3/4	3/4	3/4	3/4
85	3/4	3/4	3/4	3/4	3/4	3/4
100	3/4	3/4	3/4	3/4	3/4	3/4
125	3/4	3/4	3/4	3/4	3/4	3/4
150	1	1	1	1	1	1

TABLE 5

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inch	Inch	Inch	Inch	Inch	Inch
15	3/4	3/4	3/4	3/4	3/4	3/4
25	3/4	3/4	3/4	3/4	3/4	3/4
35	3/4	3/4	3/4	3/4	3/4	3/4
45	3/4	3/4	3/4	3/4	3/4	3/4
55	3/4	3/4	3/4	3/4	3/4	3/4
65	3/4	3/4	3/4	3/4	3/4	3/4
75	3/4	3/4	3/4	3/4	3/4	3/4
85	3/4	3/4	3/4	3/4	3/4	3/4
100	1	1	1	1	1	1

13. *Reduced thicknesses.* Reduction in thicknesses is authorized as follows except that reduced thicknesses must be not less than—

Sides, top, and bottom. Minimum $\frac{5}{16}$ " for boxes up to 35 pounds authorized gross weight and $\frac{3}{8}$ " above that weight. Ends and cleats. Minimum $\frac{7}{16}$ ".

(a) *Sides of one-piece or equivalent.* 12½%.

(b) Any part or cleat of Group 3 or 4 wood. 20%.

(c) Sides, top, and bottom when to be strapped as per paragraph 19 (b). 20% for 1 strap; 35% for 2 straps.

Conversion Table

Specified thickness (inches)	Reduced thickness corresponding to percent reduction		
	12½	20	35
9/32	3/4	3/4	3/4
5/16	3/4	3/4	3/4
1/2	3/4	3/4	3/4
5/8	3/4	3/4	3/4
3/4	3/4	3/4	3/4
7/8	3/4	3/4	3/4
1	3/4	3/4	3/4
1 1/8	3/4	3/4	3/4
1 1/4	3/4	3/4	3/4
1 1/2	3/4	3/4	3/4
1 3/4	3/4	3/4	3/4
2	3/4	3/4	3/4
2 1/4	3/4	3/4	3/4
2 1/2	3/4	3/4	3/4
2 3/4	3/4	3/4	3/4
3	3/4	3/4	3/4
3 1/4	3/4	3/4	3/4
3 1/2	3/4	3/4	3/4
3 3/4	3/4	3/4	3/4
4	3/4	3/4	3/4
4 1/4	3/4	3/4	3/4
4 1/2	3/4	3/4	3/4
4 3/4	3/4	3/4	3/4
5	3/4	3/4	3/4
5 1/4	3/4	3/4	3/4
5 1/2	3/4	3/4	3/4
5 3/4	3/4	3/4	3/4
6	3/4	3/4	3/4
6 1/4	3/4	3/4	3/4
6 1/2	3/4	3/4	3/4
6 3/4	3/4	3/4	3/4
7	3/4	3/4	3/4
7 1/4	3/4	3/4	3/4
7 1/2	3/4	3/4	3/4
7 3/4	3/4	3/4	3/4
8	3/4	3/4	3/4
8 1/4	3/4	3/4	3/4
8 1/2	3/4	3/4	3/4
8 3/4	3/4	3/4	3/4
9	3/4	3/4	3/4
9 1/4	3/4	3/4	3/4
9 1/2	3/4	3/4	3/4
9 3/4	3/4	3/4	3/4
10	3/4	3/4	3/4
10 1/4	3/4	3/4	3/4
10 1/2	3/4	3/4	3/4
10 3/4	3/4	3/4	3/4
11	3/4	3/4	3/4
11 1/4	3/4	3/4	3/4
11 1/2	3/4	3/4	3/4
11 3/4	3/4	3/4	3/4
12	3/4	3/4	3/4
12 1/4	3/4	3/4	3/4
12 1/2	3/4	3/4	3/4
12 3/4	3/4	3/4	3/4
13	3/4	3/4	3/4
13 1/4	3/4	3/4	3/4
13 1/2	3/4	3/4	3/4
13 3/4	3/4	3/4	3/4
14	3/4	3/4	3/4
14 1/4	3/4	3/4	3/4
14 1/2	3/4	3/4	3/4
14 3/4	3/4	3/4	3/4
15	3/4	3/4	3/4

Construction

14. *Assembly.* By nailing; screws, hinges and hasp, or other device of equal efficiency are authorized; nails should be driven flush.

15. (a) *Nails and nailing.* Cement coated nails of size and with spacing detailed in paragraphs 16 and 17.

(b) At cleated edges drive at least 40% of nails into cleats.

(c) Nails fastening cleats to be staggered and clinch $\frac{1}{8}$ "; uncoated nails authorized.

(d) Nailing tops and bottoms to sides permitted but not required.

16. *Nails—Kind and Dimensions.* Cement* coated of gauge and length as for "sinkers" and "coolers" as generally known to the trade; size** in "penny" as follows:

Species of wood holding points of nails	Thickness of material holding points of nails (inches)											
	3/8 or less	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2 or more
Group 1.....	4	5	5	6	7	7	8	8	8	9	9	10
Group 2.....	4	4	5	5	6	6	7	7	7	8	8	9
Group 3.....	3	4	4	5	5	6	6	7	7	7	8	8
Group 4.....	3	3	4	4	5	5	6	6	7	7	8	8

*Uncoated nails authorized when increased 25% in number.

**Nails 1-penny smaller authorized when spaced as for 2-penny smaller. Nails 2-penny smaller authorized, but not less than 3-penny, when thickness of material nailed through does not exceed $\frac{1}{2}$ of thickness of material holding points of nails.

17. *Nail spacing***.* As follows:

Nails (size)	Maximum spacing when driven into end and cleats	
	Side grain	End grain
	Inches	Inches
Threepenny.....	1 1/4	1
Fourpenny.....	1 1/4	1 1/4
Fivepenny.....	1 1/4	1 1/4
Sixpenny.....	2	1 3/4
Sevempenny.....	2 1/4	2
Eightpenny.....	2 1/4	2 1/4
Ninepenny.....	2 3/4	2 1/4
Tenpenny.....	3	2 3/4

***To determine number of nails, divide length of nailing edge by spacing; fractions greater than $\frac{1}{2}$ are considered as whole numbers.

Marking of Boxes

18. (a) *On each box.* With letters and figures at least $\frac{1}{2}$ " high in rectangle as follows:

ICC—***

The stars must be replaced by specification number and authorized gross weight (for example, ICC-15A100, ICC-15B125, etc.). This mark shall be understood to certify that box complies with all specification requirements.

(b) The words "ONE STRAP", or "TWO STRAPS", etc., when straps are required (see paragraph 13 (c)); this to be placed above or below the rectangle. Marks may also be applied as follows:

ICC—**

NO STRAP XXX LBS.
ONE STRAP XXX LBS.
TWO STRAPS XXX LBS.

The stars must be replaced by specification number and the X's by *authorized gross weights* as authorized for the strapping conditions.

Closing for Shipment

19. (a) Box to be securely closed. Nails, if used, to be as prescribed in paragraphs 16 and 17.

(b) Metal straps, as specified by marks on box, must encircle sides, top, and bottom as follows:

One nailless strap: At center of box.

Two or more nailless straps: Outer two about 1/6 of box length from ends and other equally spaced between.

Nailed straps: At ends of sides, top, and bottom; use same size nails as for closing and space not over twice as far apart.

Size of flat straps must be as follows:

Authorized gross weight (pounds)	Cross-section size when number of straps is—		
	1	2	3
50	Inch 1 1/2 x 0.020	Inch 3/8 x 0.015	-----
100	3/8 x 0.020	1/2 x 0.018	-----
200	3/4 x 0.023	5/8 x 0.020	1/2 x 0.018
300	-----	5/8 x 0.023	1/2 x 0.020
400	-----	3/4 x 0.020	1/2 x 0.023
500	-----	3/4 x 0.023	5/8 x 0.023

Wires, Washburn and Moen gauge, authorized as follows:

Authorized gross weight (pounds)	Gauge of wires when number of straps is—		
	1	2	3
50	34	36	-----
100	31	36	-----
200	26	31	36
300	-----	29	34
400	-----	29	32
500	-----	27	29

SPECIFICATION 15B—WOODEN BOXES— NAILED

Containers must comply with specification 15A except as follows (paragraph references are to specification 15A):

3. *Ends*. One-piece, or equivalent (see paragraph 5); or cleated as prescribed with joints tongued and grooved.

4. *Sides, top, and bottom*. Joints tongued and grooved.

5. (a) *One-piece equivalents*. Parts are considered equivalent to one-piece as follows:

Parts Linderman-jointed and glued.

Parts at least 1/2" thick, tongued and grooved and glued, with 2 or more corrugated fasteners on each joint.

Parts at least 1/2" thick, tongued and grooved and fastened with 3 or more corrugated fasteners on each joint.

SPECIFICATION 15C—WOODEN BOXES— NAILED

Containers must comply with specification 15A except as follows (paragraph references are to specification 15A):

3. *Ends*. One-piece, or equivalent (see paragraph 5); or cleated as prescribed.

4. This paragraph does not apply.

5. (a) *One-piece equivalents*. Parts are considered equivalent to one-piece as follows:

Parts Linderman-jointed and glued.

Parts at least 1/2" thick, tongued and grooved and glued, with 2 or more corrugated fasteners on each joint.

Parts at least 1/2" thick fastened with 3 or more corrugated fasteners on each joint.

12. (e) Tables are as follows:

TABLE 1

Depth of box (inches)	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	1/4	1/4	1/4	1/4	1/4	1/4
25	1/4	1/4	1/4	1/4	1/4	1/4
35	9/16	5/16	5/16	1/4	1/4	1/4
45	11/32	5/16	5/16	5/16	1/4	1/4
55	3/8	11/32	11/32	5/16	5/16	1/4
65	3/8	3/8	11/32	5/16	5/16	5/16
75	7/16	3/8	3/8	11/32	11/32	5/16
85	7/16	7/16	3/8	3/8	11/32	5/16
100	1/2	7/16	7/16	3/8	3/8	11/32
125	9/16	1/2	1/2	7/16	3/8	3/8
150	5/8	9/16	9/16	1/2	1/2	3/8
175	5/8	5/8	9/16	1/2	1/2	7/16
200	11/16	5/8	5/8	9/16	1/2	7/16
250	25/32	3/4	11/16	5/8	9/16	3/4
300	13/16	13/16	3/4	11/16	5/8	9/16
350	15/16	7/8	13/16	3/4	11/16	3/4
400	1	15/16	7/8	13/16	3/4	11/16
500	1 1/8	1 1/16	1	15/16	7/8	3/4

TABLE 1A

Width of box (inches)	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	1/4	1/4	1/4	1/4	1/4	1/4
25	1/4	1/4	1/4	1/4	1/4	1/4
35	9/16	5/16	5/16	1/4	1/4	1/4
45	11/32	5/16	5/16	5/16	1/4	1/4
55	3/8	11/32	11/32	5/16	5/16	1/4
65	3/8	3/8	11/32	5/16	5/16	5/16
75	7/16	3/8	3/8	11/32	11/32	5/16
85	7/16	7/16	3/8	3/8	11/32	5/16
100	1/2	7/16	7/16	3/8	3/8	11/32
125	9/16	1/2	1/2	7/16	3/8	3/8
150	5/8	9/16	9/16	1/2	1/2	3/8
175	5/8	5/8	9/16	1/2	1/2	7/16
200	11/16	5/8	5/8	9/16	1/2	7/16
250	25/32	3/4	11/16	5/8	9/16	3/4
300	13/16	13/16	3/4	11/16	5/8	9/16
350	15/16	7/8	13/16	3/4	11/16	3/4
400	1	15/16	7/8	13/16	3/4	11/16
500	1 1/8	1 1/16	1	15/16	7/8	3/4

TABLE 2

Depth of box (inches)	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	11/32	11/32	5/16	5/32	1/4	1/4
25	11/32	11/32	5/16	5/32	1/4	1/4
35	3/8	11/32	5/16	5/16	5/32	1/4
45	7/16	3/8	3/8	11/32	5/16	5/32
55	1/2	7/16	3/8	3/8	11/32	5/16
65	1/2	1/2	7/16	3/8	3/8	11/32
75	5/8	1/2	1/2	7/16	3/8	3/8
85	5/8	5/8	7/16	7/16	7/16	3/8
100	5/8	5/8	5/8	1/2	7/16	7/16
125	11/16	5/8	5/8	5/8	1/2	7/16
150	3/4	11/16	11/16	3/4	9/16	1/2
175	13/16	3/4	11/16	13/16	5/8	9/16
200	3/4	13/16	3/4	3/4	11/16	5/8
250	1	15/16	3/4	13/16	3/4	11/16
300	11/16	1	15/16	3/4	25/32	11/16
350	13/16	13/16	1	15/16	7/8	3/4
400	13/16	13/16	13/16	1	15/16	11/16
500	-----	-----	1 1/8	1 1/16	1	3/4

TABLE 2A

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Or 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	11/32	11/32	11/32	11/32	11/32	11/32
25	7/16	7/16	7/16	7/16	7/16	7/16
35	7/16	7/16	7/16	7/16	7/16	7/16
45	7/16	7/16	7/16	7/16	7/16	7/16
55	1/2	7/16	7/16	7/16	7/16	7/16
65	1/2	1/2	7/16	7/16	7/16	7/16
75	5/8	5/8	7/16	7/16	7/16	7/16
85	5/8	5/8	5/8	7/16	7/16	7/16
100	5/8	5/8	5/8	5/8	7/16	7/16
125	11/16	5/8	5/8	5/8	5/8	7/16
150	3/4	11/16	11/16	5/8	9/16	1/2
175	13/16	3/4	11/16	11/16	5/8	9/16
200	3/4	13/16	3/4	3/4	11/16	5/8
250	1	15/16	3/4	13/16	3/4	5/8
300	11/16	1	15/16	3/4	25/32	11/16
350	13/16	13/16	1	15/16	7/8	3/4
400	13/16	13/16	13/16	1	15/16	11/16
500	-----	-----	1 1/8	1 1/16	1	3/4

TABLE 3

Depth of box (inches)	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	9/32	9/32	1/4	1/4	1/4	1/4
25	3/8	11/32	11/32	5/16	5/32	1/4
35	7/16	7/16	3/8	3/8	11/32	5/32
45	1/2	1/2	7/16	7/16	3/8	11/32
55	5/8	7/16	7/16	7/16	7/16	3/8
65	5/8	5/8	5/8	1/2	7/16	7/16
75	5/8	5/8	5/8	1/2	1/2	7/16
85	11/16	11/16	5/8	5/8	1/2	1/2
100	13/16	3/4	11/16	11/16	5/8	9/16
125	13/16	3/4	3/4	11/16	5/8	9/16
150	1	7/8	13/16	3/4	11/16	5/8
175	1 1/16	1	15/16	3/4	13/16	11/16
200	13/16	1	15/16	3/4	25/32	11/16
250	13/16	13/16	1	13/16	7/8	25/32
300	15/16	13/16	13/16	13/16	15/16	7/8
350	-----	15/16	13/16	13/16	1	15/16
400	-----	-----	-----	13/16	13/16	1
500	-----	-----	-----	-----	13/16	13/16

TABLE 3A

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
25	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
35	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
45	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
55	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
65	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
75	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
85	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
100	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
125	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
150	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
175	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
200	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
250	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
300	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
350	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
400	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
500	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

TABLE 3B

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inches	Inches	Inches	Inches	Inches	Inches
15	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
25	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
35	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
45	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
55	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
65	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
75	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
85	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
100	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
125	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
150	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
175	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
200	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
250	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
300	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
350	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
400	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
500	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

TABLE 4

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inch	Inch	Inch	Inch	Inch	Inch
15	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
25	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
35	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
45	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
55	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
65	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
75	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
85	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
100	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
125	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
150	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

TABLE 5

Smallest dimension of end	Not over 8"	Not over 9"	Not over 10"	Not over 12"	Not over 14"	Over 14"
Authorized gross weight	Minimum thickness of part					
Pounds	Inch	Inch	Inch	Inch	Inch	Inch
15	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
25	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
35	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
45	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
55	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
65	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
75	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
85	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
100	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

13. *Reduced thicknesses.* Reduction in thicknesses is authorized as follows except that reduced thicknesses must be not less than:

Sides, top, and bottom. Minimum 1/4" for boxes up to 150 pounds *authorized gross weight* and 3/8" above that weight.

Ends and cleats. Minimum 7/16".

SPECIFICATION 15D—WOODEN BOXES—NAILED

Containers must comply with specification 15A except as follows (paragraph references are to specification 15A):

2. *Spaces between boards.* 4" wide authorized except that bottom pieces must be in close contact with each other and with sides and ends.

3. *Ends.* One-piece, or equivalent (see paragraph 5); or cleated as prescribed.

4. *Handles.* Containers must have suitable handles of dimensions specified herein, consisting of horizontal strips or cleats extending across top of each side or each end; handles which do not project 3" beyond the vertical edges of the container must be mounted to leave at least 7/16" open space between handle and box, or be at least 3/4" thick, or be of cross section at least equal to cleats required for single-cleated boxes of corresponding size and gross weight. Extension of cleats or side boards is acceptable for projecting handles.

Authorized gross weight, maximum (pounds)	Handles, minimum cross section (inches)
100	1/2 x 1 1/4
150	1/2 x 2 1/4
200	5/8 x 2 1/2
300	5/8 x 3 1/2
400	1 1/4 x 3 1/2

4. (a) *Tall narrow boxes.* When width of bottom is less than 3/4 of the depth of side, a cleat of length at least equal to depth of side must be nailed on each end flush with the bottom; or bottom may be extended equally beyond sides so that width is 3/4 depth of side.

5. (a) *One-piece equivalents.* Parts are considered equivalent to one-piece as follows:

Parts Linderman-jointed and glued.

Parts at least 1/2" thick, tongued and grooved and glued, with 2 or more corrugated fasteners on each joint.

Parts at least 1/2" thick fastened with 3 or more corrugated fasteners on each joint.

12. (c) *Single-cleated boxes* (Style 4 or 5). *Authorized gross weight* not over 200 pounds for boxes with vertical cleats nor over 400 pounds for boxes with horizontal cleats. Sides as in Table 1; top and bottom as in Table 1A; ends and cleats as in Table 3A.

12. (d) *Double-cleated boxes* (Style 2, 2 1/2, or 3). *Authorized gross weight* not over 500 pounds. Sides as in Table 1; top and bottom as in Table 1A; ends and cleats as in Table 2A. Or, sides as in Table 1; top and bottom as in Table 1A, cleats as in Table 3B; ends not thinner than thinnest side or top. Exception: For containers consisting of an inner wooden crate of at least 1/2" thickness throughout, with or without top, and an outside double cleated box without the openings permitted by paragraph 2, the thickness of all parts of the outside box may be reduced to not less than 3/4".

13. (a) *Sides of one piece or equivalent.* 12 1/2%. In battery boxes reinforced with separate pieces in the form of extension handles, not extension of side boards or cleats, having cross section at least equal to cleats required for single-cleated boxes of corresponding size and gross weight, 20% in sides or ends so reinforced.

14. *Assembly.* By nailing; screws, hinges and hasp, or other device of equal efficiency are authorized; nails should be driven flush. *Packages over 400 pounds gross weight.* Skids required, at least 2" x 3", not over 9" spacing, extending 3" beyond edge of package, and beveled at ends to facilitate use of rollers; side and bottom boards to be nailed to skids; bracing of parts and thickness of lumber to be sufficient to protect contents in transit; handles not required.

SPECIFICATION 16A—WOODEN BOXES—WIRE-BOUND

General

1. *Compliance.* Required in all details. Authorized tolerances.—Cleats, battens, and handles, minus 1/2"; any other wooden part, minus 12 1/2% on 10% of area of part.

Materials

2. *Lumber.* Well seasoned and commercially dry; free from decay, objectionable knots, slanting shakes, sharp cross grain, and other defects that materially lessen the strength. Grain of wood in cleats and battens must not cross piece within its length.

3. *Wires.* Of annealed steel, or other metal of equal strength, Washburn and Moen sizes.

4. *Staples.* Wire size, Washburn and Moen.

5. *Grouping of principal woods.*

GROUP 1

White pine	Noble fir
Norway pine	Willow
Aspen (popple)	Magnolia
Spruce	Buckeye
Western yellow pine	White fir
Cottonwood	Cedar
Yellow poplar	Redwood
Balsam fir	Butternut
Chestnut	Alpine fir
Sugar pine	Cucumber
Cypress	Lodgepole pine
Basswood	Jack pine

GROUP 2

Southern yellow pine	Douglas fir
Hemlock	Larch (tamarack)
North Carolina pine	

GROUP 3

White elm	Black ash
Red gum	Black gum
Sycamore	Tupelo
Pumpkin ash	Maple—soft or silver

GROUP 4

Hard maple	Birch
Beech	Rock elm
Oak	White ash
Hackberry	Hickory

Construction

6. *Closed box.* Parts and pieces with edges in close contact to give completely closed box.

7. *Top, sides, and bottom.* Each cleat- at both ends; intermediate rows of cleats authorized.

8. *Cleats.* Ends mitered or with mortise and tenon joints.

9. *Ends.* Battened when prescribed. Wired ends authorized provided wires run cross grain and terminate in loops with ends of wire driven through end board and clinched. Grain of wood perpendicular to sides except for wired ends.

10. *Wires.* One wire over each row of cleats; intermediate wires as prescribed.

11. *Stapling.* Staples for wires over cleats driven through boards into cleats and anchored; others through boards and clinched.

12. (a) *Thickness of boards (sides, tops, bottoms, and ends).* As follows except that, for thicknesses prescribed as $\frac{3}{16}$ " or less, resawn boards must be $\frac{1}{64}$ " thicker for each resawn surface:

Group of wood	Minimum thickness of boards (inch)						
	$\frac{1}{4}$ (0.125)	$\frac{1}{4}$ (0.143)	$\frac{1}{4}$ (0.167)	$\frac{3}{16}$ (0.188)	$\frac{1}{2}$ (0.219)	$\frac{3}{4}$ (0.250)	$\frac{7}{8}$ (0.313)
	Authorized gross weight, box and contents (pounds)						
1	25	35	50	75	100	150	200
2	35	50	75	100	150	200	315
3	50	75	100	150	200	315	400
4	75	100	150	200	315	400	---

(b) For boxes with 3 or more rows of cleats, boards of the next lower thickness prescribed in the table are acceptable.

13. *Size of cleats.* At least $\frac{1}{4}$ " by $\frac{1}{4}$ " when thickness required for boards exceeds $\frac{1}{4}$ "; otherwise at least $\frac{1}{8}$ " by $\frac{1}{4}$ ".

14. (a) *Binding wires (sides, top, and bottom).* Spacing not over 8". *Exception:* When each binding wire is stapled to a row of cleats, 11" spacing is authorized.

(b) Number and size of binding wires as follows:

Number of wires	Minimum gauge of wires, Washburn and Moen				
	16	15	14	13	12
	Authorized gross weight, box and contents (pounds)				
2	35	50	75	100	150
3	50	75	100	150	200
4	75	100	150	200	315
5	100	150	200	315	400
6	---	200	315	400	---
7	---	---	400	---	---

15. (a) *Wires for wired ends.* At least 2 wires on each end, size not less than as specified for binding wires in paragraph 14, and spaced as follows:

Thickness of end (inch)	Maximum spacing	
	Between wires (inch)	Wires to cleats (inch)
0.125	6	4
.143	6	4
.167	6½	4
.187	6½	4
.219	7	4
.250	7	4
.313	7	4

(b) Ends less than 10 inches deep are authorized with 1 wire provided they are reinforced by 2 strips (liners), at least $\frac{1}{4}$ " wide and as thick as ends, securely stapled along edges of the end parallel to the wires.

16. (a) *Staple spacing (approx.) and minimum size.* Staples into cleats 16 gauge, Washburn and Moen, and—

$1\frac{1}{4}$ " long with $1\frac{1}{2}$ " spacing, or $1\frac{1}{8}$ " long with 1" spacing, when boards are over $\frac{1}{4}$ " thick.

$1\frac{1}{8}$ " long with $1\frac{1}{2}$ " spacing, for boards $\frac{1}{4}$ " thick or less; except that staples $\frac{3}{8}$ " long with $1\frac{1}{2}$ " spacing are authorized when boards are $\frac{1}{4}$ " thick or less.

(b) Other staples 18 gauge, Washburn and Moen.

17. *End supporting battens**.* At least $1\frac{1}{8}$ " wide and same thickness as cleats; fastened securely across ends parallel to side cleats; required so that unsupported distance between cleats, battens, and between cleats and battens will be not greater than as follows:

**Not required for wired ends less than 20-inches long.

Thickness of ends (inch)	Maximum spacing (inches)
0.125	10
.143	11
.167	12
.187	13
.219	14
.250	15
.313	16

18. (a) *Side cleat battens.* At least $\frac{1}{4}$ " by $\frac{1}{4}$ "; fastened securely to ends so as to be adjacent to side cleats when box is set up; required, in addition to any other battens, when authorized gross weight exceeds the following:

Group of wood in cleats	Authorized gross weight, box and contents, over (pounds)
1	100
2	150
3	200
4	200

(b) *Wired end supports.* Wired ends, for boxes for authorized gross weight exceeding the foregoing, must be reinforced by 2 strips (liners), at least $1\frac{1}{4}$ " wide and as thick as ends, securely stapled along edges of the end parallel to the wires; side cleat battens not required.

Marking of Box

19. (a) *On each box.* With letters and figures at least $\frac{1}{2}$ " high in rectangle as follows.

ICC—***

Stars must be replaced by specification number and maximum authorized gross weight (for example, ICC-16A150, ICC-16B315, etc.). This mark shall be understood to certify that box complies with all specification requirements.

(b) Name of maker located just above, below, or following the mark specified in (a); symbol (letters) authorized if registered with the Bureau of Explosives.

Setting Up and Closing

20. (a) Nail or staple unwired ends to side cleats at intervals not over $2\frac{1}{2}$ "; fasten wired ends securely by means of loop fasteners.

(b) Twist ends of binding wires or bend loops to give tight closure.

(c) Nail at least 2 nails through side cleats into each side-cleat batten at not over 4" intervals; nail through top and bottom cleats with one 7-penny nail into each end of end-supporting battens.

SPECIFICATION 16E—WOODEN BOXES—WIREBOUND

Containers must comply with specification 16A except as follows (paragraph references are to specification 16A):

6. Closed box. Parts and pieces with edges in close contact to give completely closed box except that spaces $1\frac{1}{2}$ " are authorized between side boards and between top boards when boards are at least $3\frac{1}{2}$ " wide.

6 (a) *Tall narrow boxes.* When width of bottom is less than $\frac{3}{4}$ of the depth of side, a cleat of length at least equal to depth of side must be nailed to end cleats on each end flush with the bottom.

6. (b) *Handles.* Required when authorized gross weight exceed 100 pounds; securely fastened along top of sides under wires and projecting 3", or mounted on end cleats; extensions of side boards acceptable; dimensions as follows:

Authorized gross weight not over (pounds)	Handles,* minimum cross section (inches)
150	$\frac{1}{2} \times 2\frac{1}{4}$
200	$\frac{5}{8} \times 2\frac{1}{4}$
315	$\frac{5}{8} \times 3\frac{1}{4}$
400	$1\frac{1}{4} \times 3\frac{1}{4}$

*Also ridge reinforcing battens when prescribed.

9. *Ends.* Battened when prescribed. Wired ends authorized provided wires run cross grain and terminate in loops with ends of wire driven through end board and clinched. Grain of wood perpendicular to sides except for wired ends. *Ridge-top containers*, authorized as follows:

9. (a) Ends must be at least 2 times as thick as prescribed in paragraph 12.

9. (b) Unsupported distance as prescribed in paragraph 17 must not exceed 10" in any case.

9. (c) Ridge over 30" long must be reinforced on the outside, from end to end, by 2 battens with abutting edges and of cross section as prescribed for handles.

9. (d) Vertical grain unwired ends are authorized.

20. (a) Nail or staple unwired ends to side cleats at intervals not over $2\frac{1}{2}$ "; fasten wired ends securely by means of loop fasteners. Provided, that ends at least $\frac{1}{8}$ " thick may be nailed with cement-coated nails through sides, top, and bottom of box into the ends at 3" intervals.

SPECIFICATION 17C—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (b), (c) and 6. These paragraphs do not apply.

7. Parts and dimensions. As follows:

Marked capacity not over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Size (gage or inch)	Weight (pounds per foot)
5	St. side...	22	22	None...		
10	do.....	20	20	do.....		
30	do.....	18	18	(1)		
55	do.....	16	16	(1)		

1 Rolled or swaged in hoops.

8. *Convex heads.* Convex (crowned) heads, not extending beyond level of chime, required for drums of 25 gallons capacity or over; minimum convexity $\frac{5}{8}$ " for capacity 25 to 35 gallons, inclusive, and $\frac{3}{4}$ " for larger drums.

9. (c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 3 or more complete threads; two drainage holes of not over $\frac{5}{16}$ " diameter are allowed. Plug, or cap, must have sufficient length of thread to engage 3 threads when screwed home with gasket in place.

9. (d) This paragraph does not apply.

9. (e) Openings over 2.3" diameter not permitted.

11. (a) ICC—17C. This mark shall be understood to certify that the container complies with all specification requirements. The letters STC; located just below or above the ICC mark to indicate "single trip container."

13. (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.

SPECIFICATION 17E—STEEL DRUMS†

Single Trip Container

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 5A except as follows (paragraph references are to specification 5A):

5. (b) and (c) and 6. These paragraphs do not apply.

7. Parts and dimensions. As follows:

Marked capacity not over (gallons)	Type of container	Minimum thickness in the black (gage, U. S. standard)		Rolling hoops		
		Body sheet	Head sheet	Type	Size (gage or inch)	Weight (pounds per foot)
5	St. side...	24	24	None...		
10	do.....	22	22	do.....		
30	do.....	*19	*19	(1)		
55	do.....	*18	*18	(1)		

1 Rolled or swaged in hoops.

*20 gage authorized for containers not of the full open head type.

8. *Convex heads.* Convex (crowned) heads, not extending beyond level of chime, required for drums of 25 gallons capacity or over; minimum convexity $\frac{5}{8}$ " for capacity 25 to 35 gallons, inclusive, and $\frac{3}{4}$ " for larger drums. Convexity of $\frac{3}{8}$ " authorized for drums made of 18 gauge material throughout.

9. (c) For closure with threaded plug or cap, the seat (flange, etc.) for plug, or cap, must have 3 or more complete threads; two drainage holes of not over $\frac{5}{16}$ " diameter are allowed. Plug, or cap, must have sufficient length of thread to engage 3 threads when screwed home with gasket in place.

9. (d) and (e) These paragraphs do not apply.

11. (a) ICC—17E. This mark shall be understood to certify that the container complies with all specification requirements. The letters STC; located just below or above the ICC mark to indicate "single trip container."

13. (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional drop test on any other parts which might be considered weaker than the chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

13. (b) Hydrostatic pressure test of 15 pounds per square inch sustained for 5 minutes.

14. *Leakage test.* Each container shall be tested, with seams under water or covered with soapsuds or heavy oil, by interior air pressure of at least 7 pounds per square inch for containers over 12 gallons capacity and at least 5 pounds for others; leakers shall be rejected or repaired and retested; removable head containers not required to be tested with heads in place.

SPECIFICATION 18B—WOODEN KITS

General

1. *Compliance.* Required in all details.

Construction

2. *Tops and bottoms.* Pieces to be glued together.

3. *Parts required and dimensions.* As follows:

Authorized gross weight (pounds)	Thickness (minimum)		Hoops (minimum)		
	Top and bottom (inch)	Staves (inch)	Number	Width (inch)	Gauge ¹
25	1/2	3/4	3	9/16	23
40	1/2	1/2	3	9/8	23

¹ Birmingham wire gauge (number).

4. *Middle hoop of No. 11 gauge wire authorized.*

Tests

5. *Type test.* Sample, filled with dry, finely powdered material to authorized gross weight and closed as for use, shall withstand, without leaking, a drop from height of 4 feet onto solid concrete so as to strike diagonally on top chime.

Marking

6. *On each container.* Plainly as follows:

(a) ICC—***; stars to be replaced by specification number under which container was made followed by the authorized gross weight (for example, ICC-18B25). This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

7. *Size of mark (minimum).* 1/2" high.

SPECIFICATION 19A—WOODEN BOXES—GLUED PLYWOOD CLEATED

General

1. *Compliance.* Required in all details.

2. *Three-way corners* (when specified herein). Shall be of type so nailing will be into edge grain of cleats, unless otherwise specified herein.

Material

3. (a) *Lumber.* Well seasoned and commercially dry; free from decay, loose knots, knots that would interfere with nailing, and other defects that would materially lessen the strength. Cleats to be free from knots and grain of wood must not cross cleat from one-half its length.

(b) To be at least 3-ply, except for cleats; each ply glued in place with grain at right angles to the one next.

4. *Nails.* Cement coated and of size specified for "sinkers," "coolers," and

"3-ply-veneer nails" as generally known to the trade.

5. *Grouping of principal woods.*

GROUP 1

White pine	Willow
Norway pine	Noble fir
Aspen (popple)	Magnolia
Spruce	Buckeye
Western (yellow) pine	White fir
Cottonwood	Cedar
Yellow poplar	Redwood
Balsam fir	Butternut
Chestnut	Cucumber
Sugar pine	Alpine fir
Cypress	Lodgepole pine
Basswood	Jack pine

GROUP 2

Southern yellow pine	North Carolina pine
Hemlock	Douglas fir
	Larch (tamarack)

GROUP 3

White elm	Black gum
Red gum	Tupelo
Sycamore	Maple—soft or silver
Pumpkin ash	
Black ash	

GROUP 4

Hard maple	Birch
Beech	Rock elm
Oak	White ash
Hackberry	Hickory

Construction

6. *Three-way corners.* Required; except for authorized gross weight not over 75 pounds.

7. (a) *Cleats required.* 2 on each face at opposite edges; others as necessary so that cleats are not over 12" apart. These to extend full length of face.

(b) Others, if necessary, to provide nailing surface at each box edge.

8. *Parts and dimensions.* As follows:

Authorized gross weight	Ply-wood minimum thickness*	Cleats of group 1 or 2 woods*		Cleats of group 3 or 4 woods*	
		Minimum thickness*	Minimum width	Minimum thickness*	Minimum width
Pounds	Inch	Inch	Inches	Inch	Inches
50	3/32	1/2	1 1/2	1/2	1 1/2
75	3/32	9/16	1 1/2	1/2	1 1/2
100	3/16	5/8	1 3/4	1/2	1 1/2
150	3/16	11/16	2 1/4	1/2	1 1/2
200	3/16	3/4	2 3/4	9/16	1 1/2
300	3/16	13/16	2 3/4	5/8	1 3/4
400	3/16	7/8	2 3/4	11/16	2 1/4

*Variation authorized of 1/8 prescribed thickness of any part not to exceed 10% of its area. Cleats at least 1/4" thick, of cross section equivalent to prescribed cleats, are authorized.

Marking

9. (a) *On each container.* With letters and figures at least 1/2" high in rectangle as follows:

ICC—***

The stars must be replaced by specification number and authorized gross weight (for example, ICC-19A200). This mark shall be understood to certify that

box complies with all specification requirements.

(b) Name of maker located just above, below, or following the mark specified in (a); symbol (letters) authorized if registered with the Bureau of Explosives.

Setting Up and Closing

10. (a) *All boxes.* Each edge of each plywood section secured with 3-ply-veneer cement coated nails, or staples at 3" intervals as follows:

(b) To face of cleat; clinching required; cement coating optional.

(c) To edge of cleat; except when nailing through a cleat in which case nail as in paragraph 13.

11. *Boxes with 3-way corners.* Each cleat forming 3-way corner to be nailed with 2 nails at each end into edge of adjoining cleat.

12. *Boxes without 3-way corners.* Each edge cleat to be nailed to cleat on adjoining face.

13. *Nails and nailing under paragraphs 11 and 12.* To be cement coated and as follows:

Cleats—thickness (inch)	Nails—cement coated			
	Group 1 or 2 woods		Group 3 or 4 woods	
	Size (penny)	Spacing (inches)	Size (penny)	Spacing (inches)
1/2	5	1 3/4	4	1 1/2
9/16	6	2	5	1 3/4
5/8	6	2	5	1 3/4
11/16	7	2 1/4	6	2
3/4	7	2 1/4	6	2
13/16	8	2 1/2	7	2 1/4
7/8	9	2 3/4	8	2 1/2

SPECIFICATION 21A—FIBER DRUMS

General

1. *Compliance.* Required in all details.

Construction

2. *Parts and dimensions (minimum).* As follows:

Authorized net weight (pounds)	Side wall	Wooden heads†	Fiber heads‡	Max. gal. cap.	Max. inside diag.
	Calculated** strength	Thickness (inch)	Thickness (inch)		
56	680	1 3/16	0.120	590	7 1/2
56	680	1 3/16	0.120	650	15
56	680	1 3/16	0.170	800	20
115	850	1 3/16	0.170	800	30
115	850	1 3/16	0.220	900	45
200	1100	1 3/16	0.220	900	55
200	1100	1 3/16	0.260	1000	55

*Mullen or Cady test.

**Number of laminations times strength of sheet. For walls made with liner, include liner in calculations.

†Joints in heads must be Linderman joints, glued.

‡When made of 2 or more discs, the discs must be fastened together with adhesive.

3. *Side walls.* To be solid or consist of outer shell with liner; each piece to be made of a continuous fiber sheet, con-

volutely wound, at least 0.01" thick, the plies being secured together by adhesive.

Tests

4. *Type tests.* Samples taken at random, filled with dry, finely powdered material to *authorized net weight*, closed as for use, must withstand tests, under supervision of a representative of the Bureau of Explosives, without leakage or serious rupture as follows:

(a) Drum must be able to withstand a drop from height of 4 feet on a solid concrete floor, so as to strike diagonally on its (1) top chime, (2) drum closure, (3) end, or any other weak point. Drums with wood heads to be dropped with grain of wood in cover parallel to concrete surface. No single drum shall be expected to withstand more than one drop.

(b) Compression test by applying weight or pressure not less than 1,000 pounds on the top (cover) of drum.

(c) The tests described above must be made by any company starting production on samples taken at random of each type and size of container and must be repeated every 4 months or less during production; samples last tested must be retained until further tests are made.

Registration of Drum Specification

5. Specification for each type of drum manufactured (under this specification) shall be filed with the Bureau of Explosives. Changes in construction (drum and closure) differing from specification thus filed must be approved by the Bureau of Explosives before authorized for use.

Marking

6. On each container. As follows:

(a) ICC—***; stars to be replaced by specification number under which container was made, followed by the authorized gross weight (authorized net weight plus approximate tare weight, for example, ICC-21A130). This mark shall be understood to *certify* that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

SPECIFICATION 22A—WOODEN DRUMS— GLUED PLYWOOD

General

1. *Compliance.* Required in all details.
2. *Lumber.* To be well seasoned, commercially dry, and free from decay, loose knots, knots that would interfere with nailing, and other defects that would materially lessen the strength.
3. *Woods required for plywood.* As follows:

GROUP 3

White elm	Black gum
Red gum	Tupelo
Sycamore	Maple—soft or silver
Pumpkin ash	
Black ash	

GROUP 4

Hard maple	Birch
Beech	Rock elm
Oak	White ash
Hackberry	Hickory

4. *Plywood.* At least 2-ply for body and 3-ply for heads; all plies glued together cross grain.

5. *Hoops and battens.* Grain of wood must not cross piece within 1/2 of its length. Hoops to be of elm. Exception: Plywood hoops 0.28" thick are authorized.

Construction

6. *Parts and dimensions.* As follows:

Maximum net weight authorized	Thickness (minimum)		Size of Hoops (minimum)		Head liners (minimum)
	Body	Heads	Wooden	Metal	
Pounds	Inch	Inch	Inches	Inches	Inch
25	0.16	3/8	1/4 x 2	0.023 x 1 1/2	1/4 x 3/4
50	0.18	3/8	1/4 x 2	0.023 x 1 1/2	1/4 x 3/4
100	0.20	3/8	1/4 x 2 1/2	0.023 x 1 1/2	1/4 x 3/4
200	0.28	0.43	1/4 x 3	0.028 x 1 1/2	1/4 x 3/4

7. *Body joints.* To be made by steel strip 0.015" x 1 1/2" secured by staples, clinched, at 1 1/8" centers, or by other method giving equivalent strength; also to be made siftproof by 2 thicknesses of 3" paper tape 60-pound strength, Mullen or Cady test, or other equivalent protection.

8. *Hoops.* 1 wooden and 1 metal required at each chime; wooden hoops secured by staples, clinched, at 3" centers; metal hoops to be outside wooden hoops and secured by punching, or other equivalent method, at 6" centers.

9. *Head Battens.* Required for heads over 15" diameter; 3/4" x 3", minimum; ends rounded to fit chime.

10. *Head liners.* Required inside and outside for full circumference of heads. To be securely fastened by staples or nails, clinched.

11. *Head lining paper.* Required for each head; 1 1/2" larger than head diameter; of No. 1 Kraft paper 90 pounds per ream (480 sheets 24" x 36") or equivalent.

12. *Bung openings.* Bung and bung hole authorized provided head lining paper is glued around hole.

13. *Insertion of head.* As in paragraph 16.

Tests

14. Samples of each type and size taken at random, filled with dry, fine powder to the *authorized net weight* and closed as for use, must be capable of withstanding, without leakage, 2 drops diagonally on either end chime onto solid concrete from height of 4 feet.

Marking

15. On each container.—By marks 3/4" high, as follows:

(a) ICC—***; stars to be replaced by specification number under which drum was made followed by *authorized gross weight* (authorized net weight plus ap-

proximate tare weight, for example, ICC-22A115, ICC-22B235). This mark shall be understood to *certify* that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

Closing for Shipment

16. *Closing heads.* Insert head lining paper, head, and head liner; nail with 15 gauge nails, clinched, at 2" centers through head liner, body and wooden hoop; equivalent stapling authorized. Nail through steel hoop with two 7-penny nails into each end of head batten, if any.

17. *Bung closures* (if any). Must be well driven and secured sufficiently to prevent leakage in transit.

SPECIFICATION 22B—WOODEN DRUMS— GLUED PLYWOOD

Containers must comply with specification 22A except as follows (paragraph references are to specification 22A):

7. *Body joint.* To be made by steel strip 0.015" x 1 1/2" secured by staples, clinched, at 1 1/8" centers, or by other method giving equivalent strength.

10. *Head liners.* Required inside and outside for full circumference of heads. To be securely fastened by staples or nails, clinched. Not required when close fitting inside metal drum is used.

11. This paragraph does not apply.

SPECIFICATIONS 23A AND 23B

NOTE: See new specification 12B which is a consolidation of 23A, 23B, 24A, 24B, and 24D.

SPECIFICATION 23C

NOTE: See new specification 12C which is a consolidation of 23C and 24C.

SPECIFICATION 23D

NOTE: See new specification 12B which is a consolidation of 23A, 23B, 24A, 24B, and 24D.

SPECIFICATION 23E—SOLID FIBERBOARD BOXES

NOTE: Cancelled as advice from users indicates that it is unnecessary in view of specification 12C.

SPECIFICATION 23F—SOLID FIBERBOARD BOXES

Containers must comply with specification 12B except as follows (paragraph references are to specification 12B):

3, 4, 5, 6, and 7. These paragraphs do not apply.

10. *Stitching staples.* Of steel wire, copper-coated or equivalent in non-sparking quality, at least 3/16" x 0.019", or equal cross section, formed into staples about 1/4" wide.

13. *Type of box authorized.* Of solid fiberboard; 1-piece, or 3-piece without recessed heads, fitted with lining tubes.

14. *Inside packing and size limits.* As prescribed in paragraphs 23 (a) and (b).

16. (a) *For solid fiberboard.* Lapped 1 1/2" except as in par. 17; stitched at

2½" intervals and within 1" of each end of joint; double-stitched (2 parallel stitches) at each end of joint over 18" long.

16. (b) This paragraph does not apply.

17. *Flanged heads.* Must have 4 flanges, at least 1" long above fillet, on each head. *Recessed flanged heads* not authorized.

19. (a) *Flap closures.* Flaps butting or with full overlap are required.

19. (b) and (c), 20, 21, and 22. These paragraphs do not apply.

23. (a) *Authorized gross weight* (when packed) and *parts required.* Box to be of solid fiberboard, special waterproofed, at least 300-pound test, and at least 0.080" thick. Tubes to be of solid or corrugated fiberboard at least 200-pound test and of 1-piece with adjoining edges stitched or taped.

23. (b) Authorized gross weight 65 pounds when tubes divide box into 2 or more compartments or when contents consist of 1 cartridge only; otherwise 35 pounds.

24. (a) By coating with adhesive the entire contact surfaces of closing flaps.

24. (c) This paragraph does not apply.

25. (a) *On each container.* Symbol in rectangle as follows:

ICC—***

Stars to be replaced by specification number under which container was made followed by *authorized gross weight* (for example, ICC-23F35 or ICC-23F65). This mark shall be understood to *certify* that the container complies with all specification requirements.

25. (c) This paragraph does not apply.

26. This paragraph does not apply.

Special Tests

27. *By whom and when.* By or for each plant making the boxes; at beginning of manufacture and at 6-month intervals thereafter; on largest size, by weight, above and below 35 pounds gross. Report of results, with all pertinent data, to be maintained on file for 1 year; copy to be filed with Bureau of Explosives.

28. (a) *Material.* Box material (special waterproofed board) must be 300-pound test board at least 0.080" thick when commercially dry.

28. (b) Box material must also have 200-pound test strength and moisture content not over 30% as follows:

28. (c) Immediately after exposure for 3 days to 90% humidity at 75° F.

28. (d) Immediately after it has been in contact with water for 3 hours under 3" head at 75° F.

29. This paragraph does not apply.

30. *Completed containers.* Samples must pass the following immediately after exposure for 2 weeks to 90% humidity at 75° F.; loaded containers shall contain dummy contents of shape and weight same as expected contents:

30. (a) Three loaded samples to be tested. Each must withstand 200 drops in standard 7-foot revolving test drum with pointed hazard in place, without spilling any contents.

30. (b) Three loaded samples to be tested. Each must withstand end to end pressure of at least 1,600 pounds without deflection of over 1½".

30. (c) Three empty samples to be tested. Each must withstand top to bottom pressure of at least 500 pounds without deflection of ½".

SPECIFICATIONS 24A AND 24B

NOTE: See new specification 12B which is a consolidation of 23A, 23B, 23D, 24A, 24B, and 24D.

SPECIFICATION 24C

NOTE: See new specification 12C which is a consolidation of 23C and 24C.

SPECIFICATION 24D

NOTE: See new specification 12B which is a consolidation of 23A, 23B, 23D, 24A, 24B, 24D.

SPECIFICATION 24E

NOTE. This specification is cancelled as it is no longer used or made.

SPECIFICATION 25A

NOTE. Cancelled as this container is no longer used or made.

SPECIFICATION 28—METAL-JACKETED LEAD CARBOYS

General

1. *Compliance.* Required in all details.
2. *Size.* Not over 15 gallons (nominal).
3. *Test.* By 5 pounds internal pressure, without leakage, before each shipment.

Construction

4. *Parts required and dimensions.* As in drawing attached hereto and also as follows:

5. (a) *Carboy closing device.* To consist of follower-ring with stud bolts, plate-gasket, and cap as shown.

(b) Follower-ring to be 1½" wide with machined top face, inner edges rounded off to about ¼" radius, and fitted with 4 stud bolts, fastened to prevent turning, for 2" neck and 6 bolts for larger necks.

(c) Neck of carboy to be flanged over to edge of follower-ring and may be swaged out under it; inside diameter of neck not over 4".

6. (a) *Outside container.* Welding authorized in place of rivets shown; body rivets, if used, to be countersunk on inside.

(b) Bayonet fastenings, or other efficient method, authorized to secure top to body in place of bolts shown.

(c) Two adequate lifting handles required on body.

(d) Projections above level of top edge of body not authorized.

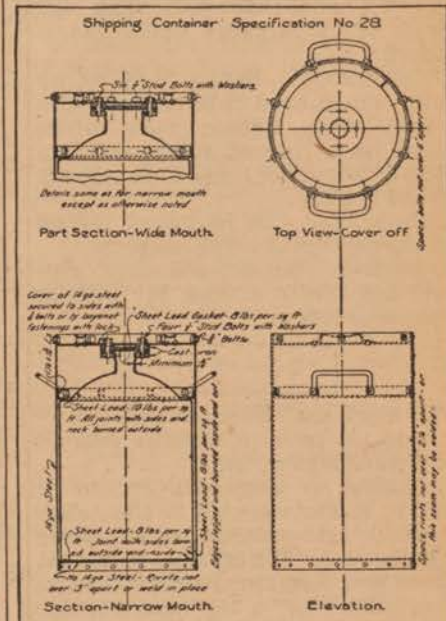
Marking

7. *On each outside container.* By embossing on top with raised marks ¾"

high as follows (stamping authorized if clearly legible):

(a) ICC-28. This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).



SPECIFICATION 28A—METAL-JACKETED LEAD CARBOYS

Containers must comply with specification 28 except as follows (paragraph references are to specification 28):

5. (c) Neck of carboy to be flanged over to edge of follower-ring and may be swaged out under it; inside diameter of neck not over 8".

7 (a) ICC-28A. This mark shall be understood to *certify* that the container complies with all specification requirements.

SPECIFICATION 29—MAILING TUBES

General

1. *Compliance.* Required in all details.

2. *Cushioning.* Inside containers, if any, must fit closely in tube or be properly cushioned.

3. *Construction.* Of fiber at least ⅛" thick; metal bottom; metal screw-cap top.

Marking

4. *On each container.* By letters and figures as follows: ICC-29; this mark shall be understood to *certify* that the container complies with all specification requirements.

SPECIFICATION 30—WOODEN BOXES—METAL LINED

NOTE: Cancelled. This was a special container and future construction is not expected.

SPECIFICATION 31—JUGS IN TUBS

1. *Compliance.* Required in all details.
2. *Jugs.* Of acid-resisting material; capacity not over 2 gallons; only 1 jug in each tub.
3. *Size of tub.* Sufficient to allow $1\frac{1}{2}$ " space around jug except at top where $\frac{1}{2}$ " space is acceptable.
4. *Material for tub.* Of sound wood; $\frac{7}{8}$ " staves; $\frac{1}{8}$ " top and bottom; at least 5 wooden hoops $\frac{7}{8}$ " x $\frac{1}{8}$ " (approx.) or 3 metal hoops with rolled edge at least $\frac{3}{4}$ " x 29 gauge United States standard.
5. *Construction.* Staves to be set up evenly; bottom hoop to be fastened with at least seven 4-penny nails driven through hoop, through staves, and into bottom of tub; other hoops to be securely fastened in place.
6. *Cushioning.* To be tightly packed with adequate cushioning material.
7. *Marking.* On each container; with letters and figures at least $\frac{1}{2}$ " high in rectangle as follows:

ICC—***

This mark shall be understood to certify that the package complies with all specification requirements.

8. *Closing for shipment.* Jug to be closed by rubber stoppers, or other closure equally acid-resistant; cork stoppers not authorized. Top of tub to be secured in place by at least four substantial metal strips, at least $\frac{7}{16}$ " x $3\frac{1}{2}$ " nailed to side and top of tub.

SPECIFICATIONS 32A, 32B, 32C, AND 32D—METAL CASES AND TRUNK

General

1. *Compliance.* Required in all details.
2. *Gauge standards.* United States standard for sheet metal; American or Brown and Sharpe for wire.
3. *Covers.* To have at least 1" lap on body and to fit with clearance not over $\frac{1}{2}$ "; lapped corners to be welded.
4. *Edge protection.* Open edges of body must be turned or rolled inward; front open edge of cover must be turned or rolled outward. Not required for material at least 20-gauge thick or for "trailer" cases.
5. *Bottom protection.* Face on which case will ordinarily rest must be reinforced with continuous angle straps, or be fitted with trunk corners, or be double thickness along edges. Not required for cases of at least 20-gauge metal or of not over 1 reel capacity or for "trailer" cases.
6. *Hinges.* To be of continuous loop type with loops of steel wire at least 7-gauge, welded; hinge straps at least 18-gauge, securely welded or riveted.
7. *Carrying handles.* Any type of adequate strength.
8. *Closing devices.* To be of sufficient strength and efficiency to prevent injury or unfastening in tests (par. 14) or in transit.

9. *Rivets.* At least $\frac{3}{4}$ " diameter; length to furnish efficient heads; split rivets not authorized except for attachment of lining.

10. *Rivet reinforcement.* Hinges, fastening devices, and handles, when riveted in place, must have additional inside reinforcement of steel, at least as thick as in case, through which rivets must pass. Not required when case is made of at least 20-gauge material throughout.

11. *Lining.* Required throughout; to be hard-surfaced fiberboard at least 0.125" thick and with strength of 800 pounds, Mullen or Cady test, or wooden lining at least 0.25" thick.

12. *Metal partitions* (when used). To be as thick as body of case, permanently fastened to the case, and lined the same as the case.

13. *Protective coating.* Steel cases must be of galvanized material or protected from corrosion by paint, lacquer, or other adequate coating.

Tests

14. *Type tests.* Cases completely filled as for shipment must be capable of withstanding 4 successive drops onto solid concrete from a height of 6 feet without rupture of case or permanent damage to or unfastening of closing device. Tests to be made by dropping on cover, seam, or any corner.

Marking

15. *On each container.* By the maker with plain and permanent marks at least $\frac{1}{2}$ " high as follows:

(a) ICC—***; stars to be replaced by specification number under which container was made (for example, ICC-32A, ICC-32B, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

32A—Metal Cases—Riveted or Lock-Seamed

16. *For cases with capacity (approx.) not over 9,000 feet of $1\frac{3}{8}$ " film.* Compliance with pars. 1 to 15 required. Seams to be lock-seams or riveted. Material to be steel, at least 20-gauge. 2 hinges, 1 fastening device, and 1 carrying handle required.

17. *For cases with capacity (approx.) not over 8,000 feet of $1\frac{3}{8}$ " film or 4,500 feet of $2\frac{1}{2}$ " film.* Construction as in par. 16, except: 22-gauge material authorized; 1 hinge authorized for single-reel cases.

18. *For cases with capacity not over 1 reel of 10" diameter.* Construction as in par. 16, except: 24-gauge material and 1 hinge authorized.

19. *For cases with capacity not over 500 feet of film—"Trailer Cases".* Con-

struction as in par. 16, except: 26-gauge material and 1 hinge of any type authorized.

32B—Metal Cases—Welded or Riveted

20. *For cases with capacity (approx.) not over 12,000 feet of $1\frac{3}{8}$ " film or 6,000 feet of $2\frac{1}{2}$ " film.* Compliance with pars. 1 to 16 required. Seams to be welded or riveted. Material to be steel, or aluminum-manganese alloy, at least 18-gauge. 2 hinges, 2 fastening devices spaced as for hinges, and 2 carrying handles required.

21. *For cases with capacity (approx.) not over 9,000 feet of $1\frac{3}{8}$ " film.* Compliance with pars. 1, 20, except: 1 fastening device and 1 carrying handle authorized.

22. *For cases with capacity (approx.) not over 8,000 feet of $1\frac{3}{8}$ " film or 4,500 feet of $2\frac{1}{2}$ " film.* Construction as in par. 20, except: 20-gauge material, 1 fastening device, and 1 carrying handle authorized; 1 hinge authorized for single-reel cases. Detachable covers (no hinges), with $\frac{3}{4}$ " lap on body and efficiency to prevent displacement in tests, are authorized. *Trailer cases*, capacity not over 500 feet of film.—No handle required. Cover lap not less than full one-half inch.

32C—Trunks

23. Authorized for motion-picture film and projecting apparatus. Compliance with pars. 1 to 14 not required.

24. To be designed to contain film in film-reel cans and projecting apparatus only; other articles not authorized therein.

25. To be of strength and efficiency to carry contents in ordinary handling without damage to trunk or contents.

26. Separate compartments required for each reel of film and for projecting apparatus; each compartment to be constructed so that, in closing, it will have no cracks or openings.

27. Each film compartment to be made of, or lined throughout with, sheet metal; this metal to be protected against contact with film-reel can by a substantial interlining fiberboard or equivalent.

28. Marking required as prescribed in par. 15. This to be applied on 2" by 4" metal plate securely riveted to top of cover of trunk.

32d—Metal Boxes for Old and Worn-out Motion-picture Film No Longer Exhibitable

29. Compliance with pars. 1, 2, 14, and 15 required except that drop tests may be made from height of 4 feet.

30. Material to be steel; body and bottom at least 16-gauge; cover at least 18-gauge.

31. All joints and seams to be welded or riveted.

32. Cover must be tight-fitting, to prevent entrance of sparks, with provision for secure fastening to be locked or sealed.

SPECIFICATION 34B—ALUMINUM CARBOYS

General

1. *Compliance.* Required in all details.
2. *Rated capacity.* As marked, see paragraph 9: 5 to 15 gallons; actual capacity shall be rated capacity plus at least 2%.

Material

3. *Composition.* Body and heads aluminum at least 99% pure, or an aluminum base alloy of equivalent corrosion resistance and physical properties.

Construction

4. *Outage.* Two percent of rated capacity, plus a maximum tolerance of 1 quart.
5. *Seams.* Welded, including attachment of handles and other devices. Circumferential seams at least 3" from bottom.
6. *Parts and dimensions.* Thickness of material at least 0.110"; handles required.
7. (a) *Closures.* Adequate to prevent leakage; openings over 2.3" not authorized; suitable gaskets required.
(b) When threaded plugs, or caps, are used, they must be close fitting with gasket surfaces which bear squarely on each other when without gasket; they must have not over 8 threads per inch, with 5 complete threads engaged when gasket is in place, or not over 4 threads per inch, with 2 complete threads similarly engaged. Thread form shall be similar to that shown by drawing in specification 5A.
8. *Projections.* Closing devices and other parts must be able to withstand tests prescribed in paragraph 11.

Marking

9. *On each container.* On top; by stamping with pressure dies, by embossing with raised marks, or plate attached by welding, as follows:
(a) ICC-34B. This mark shall be understood to certify that the container complies with all specification requirements.
(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).
(c) *Gauge of metal.* Brown and Sharpe, in thinnest part; rated capacity in gallons; year of manufacture (for example, 7-30-37).
10. *Size of marking* (minimum). $\frac{1}{2}$ " high.

Tests

11. *Type tests.* Samples, taken at random and closed as for use, shall withstand prescribed tests without leakage except that leakage through closure shall not constitute failure. Tests to be made by each company starting production and to be repeated every four months. Sam-

ples last tested to be retained until further tests are made. The type tests are as follows:

- (a) Test by dropping, filled with water to 98% capacity, from height of 4 feet onto solid concrete so as to strike on bottom edge or circumferential seam.
- (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.
12. *Leakage test.* Each container shall be tested, with seams under water or covered with soapsuds or heavy oil, by interior pressure of at least 10 pounds per square inch. Leakers shall be rejected or repaired and retested.

SPECIFICATION 35—WOODEN BARRELS WITH REMOVABLE HEADS

NOTE: Canceled. This was a special container and future construction is not expected.

SPECIFICATION 36A—LINED CLOTH BAGS (TRIPLEX)

General

1. *Compliance.* Required in all details.
2. *Capacity.* Not over 100 pounds net.

Material

3. *Cloth.* Osnaburg cotton cloth at least $8\frac{1}{2}$ ounces per square yard.
4. *Paper.* No. 1 Kraft, creped. A "ream," as used herein, means 480 sheets 24" x 36" before creping.

Construction

5. *Assembly.* Either of the following:
(a) Single bag. Cloth-lined with 2 sheets of creped paper, each at least 35 pounds per ream, cemented together and to cloth. Combined tensile strength at least 100 pounds, warp and fill.
(b) Triple bag. Outer of cloth; intermediate of 2 thicknesses of creped paper, each at least 30 pounds per ream, cemented together with asphalt so as to weigh 90 pounds per ream; inner of creped paper at least 45 pounds per ream.
6. *Seams.* To be dusttight.
7. *Test.* The finished container, filled and closed as for shipment, must be capable of withstanding drop test of 4 feet without sifting.

Marking

8. *On each container.* By marks at least 1" high as follows:
(a) ICC-36A; this mark shall be understood to certify that the container complies with all specification requirements.
(b) Name and address of maker; located above or below the mark specified in (a); symbol (letters) authorized if registered with the Bureau of Explosives.

Closing For Shipment

9. By double tying with steel wires at least No. 16 Birmingham wire gauge; inner bags, if any, to have edges rolled in before outer bag is tied.

SPECIFICATION 36B—BURLAP BAGS—LINED

General

1. *Compliance.* Required in all details.
2. *Capacity.* Not over 100 pounds, net.

Material

3. *Burlap.* At least equal in quality and strength to 10-oz., 40" (10/40), Calcutta A and/or B mill grade. Thread count at least 11 per 37/40", porter, and 12 per inch, shot; this to be an average of 6 counts.
4. *Paper.* No. 1 Kraft, creped; at least 25 pounds per ream (480 sheets, 24" x 36") before creping.

Construction

5. (a) *Assembly.* Burlap to be lined with 2 sheets of creped paper cemented together and to burlap.
(b) Adhesive between paper sheets to be asphalt, melting point 150° F., at minimum rate of 110 pounds per ream.
(c) Adhesive between paper and burlap to be either: (1) Curing rubber latex at minimum rate of 40 pounds, dry weight, per ream; (2) Asphalt, any desirable type, at minimum rate of 110 pounds per ream.
6. *Stretch of paper lining.* At least equal to that of burlap in direction of warp and fill and equal to 10 percent in diagonal direction.
7. *Seams.* By cementing or taping to give seam strength at least equal to that of bag material and prevent sifting.
8. *Test.* The finished container, filled and closed as for shipment, must be capable of withstanding drop test of 4 feet on the butt without sifting or rupture of burlap or liners.

Marking

9. *On each container.* By marks at least 1" high as follows:
(a) ICC-36B; this mark shall be understood to certify that the container complies with all specification requirements.
(b) Name and address of maker; located above or below the mark specified in (a); symbol (letters) authorized if registered with the Bureau of Explosives.

Closing for Shipment

10. As specified for seams, paragraph 7; or, by tying with 2 steel wires of at least No. 16 Birmingham wire gauge.

SPECIFICATION 37D—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

General

1. *Compliance.* Required in all details.
2. *Rated capacity* as marked, see paragraph 8 (c).—Actual capacity not less than rated (marked) capacity plus 2%, not greater than rated capacity plus 2% plus 1 quart.

Material

3. *Composition.* Sheets for body and heads to be low carbon, open hearth or electric steel.

4. *Weight of sheets.* Average draft weight for any gauge not less than as follows:

Gage, United States standard (No.)	Standard weight per square foot	Authorized tolerances	Gage, United States standard (No.)	Standard weight per square foot	Authorized tolerances
	Pounds	Percent		Pounds	Percent
12	4.375	5	19	1.750	3½
13	3.750	5	20	1.500	3½
14	3.125	5	22	1.250	3½
15	2.8125	5	24	1.000	2½
16	2.500	5	26	.750	2½
18	2.000	3½	28	.625	2½

Construction

5. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Welded side seam required	Minimum thickness in the black (gage, U. S. standard)	
				Body sheet	Head sheet
3 to 55	80	St. side	No	24	24
Do	160	do	No	22	22
Do	300	do	No	20	20
Do	425	do	No	19	19
Do	480	do	Yes	19	19
Do	880	do	Yes	18	18

6. *Closure required.* Adequate to prevent leakage; gaskets required when necessary; to be of screw-thread type or secured by positive fastening.

7. *Defective containers.* Leaks and other defects to be repaired by method used in constructing container, not by soldering.

Marking

8. *On each container.* By embossing on head with raised marks as follows:

(a) ICC-37D***; stars to be replaced by the authorized gross weight (for example, ICC-37D880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letter) of maker; this must be recorded with the Bureau of Explosives.

(c) Gauge of metal in thinnest part, rated capacity in gallons, and year of manufacture (for example, 18-55-39). When gauge of metal in body differs from that in head, both must be indicated with slanting line between and with gauge of body indicated first (for example 14/12-55-39 for body 14 gauge and head 12 gauge).

(d) The letters STC; located just above or below the ICC mark to indicate "single trip container."

9. *Size of markings* (minimum). ½" high for 30-gallon or less, ¾" for over 30 gallons.

Tests

10. *Type test.* Samples, taken at random and closed as for use, shall withstand prescribed test without leakage. Tests to be made of each type and size by each company starting production and to be repeated every four months. Sample last tested to be retained until further tests are made. The type test is as follows:

Test by dropping, filled with dry, finely powdered material to the authorized gross weight, from height of 4 feet onto solid concrete so as to strike diagonally on top chime. Closing devices and other parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

SPECIFICATION 37E—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 37D except as follows (paragraph references are to specification 37D):

5. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Welded side seam required	Minimum thickness in the black (gage, U. S. standard)	
				Body sheet	Head sheet
3 to 55	80	St. side	No	26	26
Do	160	do	No	25	25
Do	220	do	No	24	24
Do	425	do	No	23	22
Do	480	do	Yes	22	22
Do	880	do	Yes	20	20

8. (a) ICC—37E * * * ; stars to be replaced by the authorized gross weight (for example, ICC—37E880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 37F—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 37D except as follows (paragraph references are to specification 37D):

5. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Welded side seam required	Minimum thickness in the black (gage, U. S. standard)	
				Body sheet	Head sheet
5 to 55	80	St. side	No	26	26
Do	160	do	No	26	26
Do	425	do	No	24	24
Do	480	do	Yes	24	24
Do	880	do	Yes	22	22

8. (a) ICC—37F***; stars to be replaced by the authorized gross weight (for example, ICC—37F880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 37G—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 37D except as follows (paragraph references are to specification 37D):

5. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Welded side seam required	Minimum thickness in the black (gage, U. S. standard)	
				Body sheet	Head sheet
5 to 55	80	St. side	No	28	28
Do	160	do	No	28	28
Do	325	do	No	26	26
Do	425	do	No	24	24
Do	480	do	Yes	26	26
Do	880	do	Yes	24	24

8. (a) ICC—37G * * * ; stars to be replaced by the authorized gross weight (for example, ICC—37G880, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 37H—STEEL DRUMS†

(Single Trip Container)

†Removable head containers which will pass all required tests are authorized.

Containers must comply with specification 37D except as follows (paragraph references are to specification 37D):

5. *Parts and dimensions.* As follows:

Marked capacity (gallons)	Authorized gross weight (pounds)	Type of container	Minimum thickness in the black (gage, U. S. standard)	
			Body sheet	Head sheet
5 to 10	45	St. side	28	28
5 to 35	145	do	26	26
5 to 30	245	do	24	24
5 to 55	245	do	22	22

5. (a) Side seams and chimes must be welded or of Gordon or other equally efficient lock type.

5. (b) Drums of 26 gauge head and body sheets with lap welded body seams are also authorized for size 5 to 30 gallons with maximum authorized gross weight of 220 pounds.

6. *Closure required.* Adequate to prevent leakage; gasket required; to be of screw-thread type or secured by positive fastening. Filling opening over 9" diameter unauthorized, except when consisting of full removable head. Dust-

proof closure required. If closing device cannot be opened and closed without reducing efficiency, container must, when specified on purchase order, be provided with supplementary opening for sampling at least 2" in diameter with closing device such that it can be opened and closed without reduction of efficiency.

8. (a) ICC-37H***; stars to be replaced by the authorized gross weight (for example, ICC-37H245, etc.). This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 42B—ALUMINUM DRUMS

General

1. *Compliance.* Required in all details.

2. *Rated capacity.* As marked, see paragraph 9. Not less than 5 gallons; actual capacity shall be rated capacity plus at least 2%.

Material

3. *Composition.* Body and heads of aluminum at least 99% pure, or an aluminum base alloy of equivalent corrosion resistance and physical properties.

Construction

4. *Outage.* Two percent of rated capacity, plus a maximum tolerance of 1 quart.

5. *Seams.* Welded, including attachment of flanges for closures and other devices. Circumferential seams at least 3" from top of chime; chime seams not permitted.

6. (a) *Parts and dimensions.* As follows:

Marked capacity not over (gallons)	Minimum thickness of material (inch)	Rolling hoops required, type authorized, and minimum dimensions	
		I-bar, size (inch)	U-type, aluminum, thickness (inch)
10	0.110	3/4 x 1 1/4	0.139
30	.154	3/4 x 1 1/4	.193
55	.187	3/4 x 1 1/4	.234
110	.230	1 x 1 1/2	-----

(b) Rolling hoops must be firmly secured in place and not over 19" apart; beading under hoops not permitted.

7. (a) *Closures.* Of screw-thread type or secured by screw-thread device; openings over 2.3" not authorized; suitable gaskets required.

(b) Threaded plugs, or caps, and flanges must be close fitting with gasket surfaces which bear squarely on each other when without gasket; they must have not over 8 threads per inch, with 5 complete threads engaged when gasket

is in place, or not over 4 threads per inch, with 2 complete threads similarly engaged; two 3/8" drainage holes are authorized in flange. Thread form shall be similar to that shown by drawing in specification 5A.

8. *Projections.* Closing devices and other parts must not project beyond chime or rolling hoops.

Marking

9. *On each container.* On top head; by stamping with pressure dies, by embossing with raised marks, or plate attached by welding, as follows:

(a) ICC-42B. This mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

(c) Gauge of metal, Brown and Sharpe, in thinnest part; rated capacity in gallons; year of manufacture (for example, 7-30-37).

10. *Size of marking (minimum).* 1/2" high for 30-gallon and smaller containers, 3/4" for over 30 and not over 55 gallons, and 1" for over 55 gallons.

Tests

11. *Type tests.* Samples, taken at random and closed as for use, shall withstand prescribed tests without leakage. Tests to be made of each type and size by each company starting production and to be repeated every four months. Samples last tested to be retained until further tests are made. The type tests are as follows:

(a) Test by dropping, filled with water to 98% capacity, from height of 6 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional test on any other parts which might be considered weaker than the chime.

(b) Hydrostatic pressure test of 60 pounds per square inch sustained for 5 minutes.

12. *Leakage test.* Each container shall be tested, with seams under water or covered with soapsuds or heavy oil, by interior pressure of at least 15 pounds per square inch. Leakers shall be rejected or repaired and retested.

SPECIFICATION 42C—ALUMINUM BARRELS OR DRUMS

Containers must comply with specification 42B except as follows (paragraph references are to specification 42B):

6. (a) *Parts and dimensions.* As follows:

Marked capacity not over (gallons)	Type of container	Minimum thickness of material (inch)	Rolling hoops required, type authorized, and minimum dimensions	
			I-bar, size (inches)	U-type, aluminum, thickness (inch)
10	St. side	0.093	3/4 x 1 1/4	0.116
30	do	.129	3/4 x 1 1/4	.161
55	do	.155	3/4 x 1 1/4	.194
110	do	.192	1 x 1 1/2	-----
15	Bilge	.110	* Expanded from shell.	
30	do	.150	Do.	
55	do	.180	Do.	

* Only required when side openings are used.

9. (a) ICC-42C. This mark shall be understood to certify that the container complies with all specification requirements.

SPECIFICATION 42D—ALUMINUM DRUMS

Containers must comply with specification 42B except as follows (paragraph references are to specification 42B):

6. (a) *Parts and dimensions.* As follows:

Marked capacity not over (gallons)	Minimum thickness of material (inch)	Rolling hoops required, type authorized, and minimum dimensions	
		I-bar, size (inches)	U-type, aluminum, thickness (inch)
10	0.093	3/4 x 1 1/4	0.092
30	.102	3/4 x 1 1/4	.128
55	.123	3/4 x 1 1/4	.154
110	.154	1 x 1 1/2	-----

7. (a) *Closures.* Of screw-thread type or secured by screw-thread device; openings over 2.3" not authorized; suitable gaskets required.

Vented closing devices of type approved by the Bureau of Explosives are authorized when specified by the purchaser.

9. (a) ICC-42D. This mark shall be understood to certify that the container complies with all specification requirements.

11. (a) Test by dropping, filled with water to 98 percent capacity, from height of 4 feet onto solid concrete so as to strike diagonally on chime, or when without chime seam, to strike on other circumferential seam; also additional test on any other parts which might be considered weaker than the chime.

11. (b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes.

12. *Leakage test.* Each container shall be tested with seams under water or covered with soapsuds or heavy oil by in-

terior pressure of at least 10 pounds per square inch. Leakers shall be rejected or repaired and retested.

SPECIFICATION 43A—RUBBER DRUMS

General

1. *Compliance.* Required in all details.

2. *Rated capacity.* As marked see paragraph 8. Actual capacity shall be rated capacity plus at least 2%.

Material

3. *Body and heads.* Of at least two laminations; inside lamination of synthetic rubber, or of pale crepe rubber compounded with paraffin or otherwise treated, such as to be capable of withstanding the action of hydrofluoric acid, up to 65 percent H. F. maximum, for 30 days without any substantial deterioration; other laminations of cotton fiber and rubber.

4. *Rolling hoops.* Tough rubber free from cotton or other fiber.

Construction

5. *The drum.* Body, heads, lining, rolling hoops, and filling hole flange to be all vulcanized together at one operation. No cements, adhesives or secondary vulcanization authorized.

6. *Parts and dimensions.* As follows:

Rated capacity (U. S. wine gallons)	Minimum weight (pounds)	Minimum thickness		Rolling hoops			
				Chime (quarter round)		Body (half round)	
		Body (inch)	Head (inch)	Width (inches)	Depth (inch)	Width (inches)	Depth (inch)
*5	18	3/4	1 1/4	1 3/4	3/4	2	1
*13	30	3/4	1 1/2	2	1	2 1/4	1
*30	85	9/16	1 1/2	2 1/4	1	2 1/4	1

*Other capacities not authorized.

7. *Closures.* To be such as to prevent spillage or leakage in transit and must be approved by the Bureau of Explosives.

Marking

8. *On each container.* On top head plainly and permanently as follows:

(a) ICC-43A; this mark shall be understood to certify that the container complies with all specification requirements.

(b) Name or symbol (letters) of maker; this must be registered with the Bureau of Explosives and located just above, below, or following the mark specified in (a).

(c) Rated gallonage and year of manufacture (for example, 5-35).

Tests

9. *Type tests.* Samples, taken at random and closed as for use, shall withstand prescribed tests without leakage. Tests to be made of each type and size by each company starting production and to be repeated every four months. Samples last tested to be retained until

further tests are made. The type tests are as follows:

(a) Test by dropping, filled with water to 98% capacity, from height of 6 feet onto solid concrete so as to strike diagonally on top chime. Also a 4-foot drop to strike directly on closing device. Parts projecting beyond chime or rolling hoops must also be capable of withstanding this test.

(b) Hydrostatic pressure test of 40 pounds per square inch sustained for 5 minutes, using drums which have passed the drop test; side walls must not expand beyond chime hoops.

10. *Material test.* Samples from side wall and end must have breaking strength at least 1,200 pounds per square inch.

SPECIFICATION 44B—PAPER BAGS

Construction

1. (a) Bags must be at least 4 thicknesses of paper; this must be No. 1 Kraft bag-paper, or equivalent, with a minimum total basis weight of 200 pounds (480 sheets 24" x 36"). Outer sheet must be of highly sized, hard finish, waterproofed stock and at least 60 pounds basis weight, inner sheets not less than 40 pounds each. Bags to be of "satchel bottom" construction; bottoms to be reinforced with a Kraft paper patch at least 30 pounds basis weight. Other bottoms of equal efficiency are authorized.

(b) Or, bags must be at least 2 thicknesses of paper; this must be No. 1 Kraft bag-paper, or equivalent, with a minimum total basis weight of 110 pounds (480 sheets 24" x 36"), fastened together with waterproof composition reinforced with jute, sisal, cotton, or other yarn or cord imbedded in the composition and criss-crossed at intervals of not over 1/2", approximately, so as to give approximately the same tensile strength for both width and length. Bags to be of "satchel bottom" construction. Other bottoms of equal efficiency are authorized.

2. Mullen or Cady test of all Kraft paper used must be not less than 90% of basis weight.

3. Moisture resistant adhesive must be used on all seams, joints, and bottom patch, if any.

Closure

4. (a) For 4-ply bags: Inner (fourth) ply to be diamond folded, loose; the third ply to be diamond folded and silicated across all its overlapping folds; the two outer plies to be diamond folded, and cross sealed, front to back and side to side, with gummed tape extending as least 2 inches down sides of bag; sealing tape must be 4" wide, of No. 1 Kraft paper, 90 pounds basis weight (480 sheets 24" x 36"), or equivalent, and having a strength, Mullen or Cady test, of not less than 90 pounds. Other closures of equal efficiency are authorized.

(b) For all bags: Any closure for the top which is equal in efficiency to that of the bottom, is authorized.

Tests

5. Bags as prepared for shipment must be able to withstand four 4-foot drops, one on each end and one each on opposite sides, without sifting or rupture.

Marking

6. (a) *On each bag.* With letters and figures at least 1/2" high in rectangle as follows:

ICC—44B

This mark shall be understood to certify that bag complies with all specification requirements.

(b) Name and address of maker located just above or below the mark specified in (a); symbol (letters) authorized if registered with the Bureau of Explosives.

TANK CAR TANK SPECIFICATIONS

Preface. The following specifications for tanks are minimum requirements. Changes or modifications thereof may be made effective by further orders of the Commission (see sec. D of General Information of the Commission's regulations). Wherever the word "approved" is used in these specifications, it refers to Procedure covered in sec. E of General Information.

SPECIFICATION 103—RIVETED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward, and must have at least one expansion dome with manhole, and such other external projections as are prescribed herein. When the interior of the tank is divided into compartments, each compartment must have two heads dished convex outward, one expansion dome with manhole, and such other external projections as are prescribed herein.

2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal seam, must be at least 300 pounds per square inch.

3. *Material.* (a) All plates for tank and expansion dome must be made of open-hearth boiler plate steel of flange quality. These plates may also be clad with other metals, such as nickel, etc.

(b) All external projections must be made of materials specified hereinafter.

(c) Rivets must be of the same quality as used for steam boilers and other pressure vessels. When clad plates are used, the rivet heads inside the tank must be clad with the same material or rivets may be of the same cladding material, provided rivets have physical properties at least equivalent to rivets prescribed herein.

(d) Tanks made of clad plates must be stenciled "Tank clad with ----- (naming material)."

4. *Thickness and width of plates.* (a) The minimum thickness of plates, including thickness of each plate at rivet seams, must be as follows:

Inside diameter of tanks	Bottom sheets	Shell sheets	Expansion dome sheets	Tank heads	Expansion dome heads*	Interior compartment heads
60 inches or under	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 60 to 78 inches	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 78 to 96 inches	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 96 to 112 inches	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 112 to 122 inches	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$

*Expansion dome heads for domes exceeding 70 inches in diameter must have a minimum thickness of $\frac{3}{8}$ inch.

(b) The minimum thickness of clad plates, where cladding material has physical properties at least equal to that of the base plate prescribed in paragraph 3 (a), must be as prescribed in the above table. Where the cladding material does not have physical properties at least equal to that of the base plate prescribed in paragraph 3 (a), minimum thickness of base plate must be as prescribed in the above table.

(c) The minimum width of bottom sheet of tank must be 60 inches, measured on the arc, but in all cases the width must be sufficient to bring the entire width of the longitudinal seam, including overlaps, above the cradle.

5. *Dishing of tank heads.* (a) Tank heads must be of approved contour.

6. *Riveting.* (a) For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. All rivets must be driven hot.

(b) All seams formed in the manufacture of the tank and expansion dome proper and the attachment of the expansion dome to the tank must be double riveted. Dome head, manhole ring, safety valve flange, and bottom outlet nozzle flange must be single or double riveted. Riveted seams and joints must be made metal to metal without interposition of other material with the exception that the use of two liners not to exceed 1 inch in width and $\frac{1}{16}$ inch in thickness, placed at an angle across the longitudinal seams between two rows of rivets near the internal tank heads on compartment cars to prevent the liquid from passing along the longitudinal seams from one compartment to another while cars are being water tested, will be permissible. The efficiency of double-riveted seams must be at least 70 percent of the strength of the thinnest plate specified in paragraph 4. The efficiency of single-riveted seams must be at least 45 percent of the strength of the thinnest plate specified in paragraph 4. Use of rivets less than $\frac{5}{8}$ inch nominal diameter not permissible on any part of tank or attachments.

7. *Tank mounting.* (a) The manner in which tank is supported on and securely attached to the car structure must be approved.

8. *Preparation for calking and calking.*

(a) The edges of plates at all riveted seams must be beveled so that the angle of the calking edges will be between 60 and 70 degrees with the flat surface of the plate. The extreme calking edge distance, measured from center line of rivet hole, must be at least one and one-half times the diameter of the hole and not more than that distance plus $\frac{1}{4}$ inch.

(b) All seams, including those formed by attachment of expansion dome and other external projections, must be calked both inside and outside, except that inside calking of the seam formed by attachment of expansion dome to tank is not required and outside calking of seams formed by attachment of all external projections, except the expansion dome, is not required. Split calking prohibited.

9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 2 percent of the total capacity of the tank and dome combined, except that when safety valve or safety vent is applied to side of dome, the effective capacity of dome must be measured from top of safety valve or safety vent opening in the side of dome to inside top of shell of tank.

(b) The opening in manhole ring must be at least 16 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches and not more than 30 inches in diameter.

(c) The dome head must be dished convex outward.

10. *Closures for manholes.* (a) The manhole cover must be of approved type, and designed to make it practically impossible to remove the cover while the interior of the tank is subjected to pressure.

(b) Manhole rings and covers must be of cast or pressed steel, malleable iron or other malleable metals.

(c) All covers, not hinged to tank, must be attached to outside of the dome head by at least a $\frac{3}{8}$ inch chain or its equivalent.

(d) All joints between manhole covers and their seats must be made tight against leakage of vapor and liquid by use of gaskets of suitable material.

11. *Gauging, bottom outlet valve operating, venting, loading and discharging, and air inlet devices extending through domes of tanks.* (a) Not specification requirements. When installed, these devices, including their valves, must be protected from accidental injury by being set into a securely covered recess, or by means of a cast or pressed steel or malleable iron housing with cover securely attached. Openings in wall of housing must be equipped with screw

plugs or other closures. Drain holes permitted. Discharging (siphon) pipes must be securely anchored.

12. *Venting, loading, and discharging, and air inlet devices.* (a) These devices, when installed, must be closed by efficient valves made of metal not subject to rapid deterioration by the lading. Provision must be made for closing the pipe connections of the valves.

13. *Bottom discharge outlets.* (a) The bottom discharge outlet, when installed, must be made of metal not subject to rapid deterioration by the lading, be of approved construction, and be provided with a valve at its upper end and a liquid-tight closure at its lower end.

(b) The valve operating mechanism and outlet nozzle construction must be such as to insure against unseating of valve due to stresses or shocks incident to transportation.

(c) Tanks used for the transportation of poisonous solids, when designed for bottom unloading, must have the openings securely closed against leakage.

14. *Safety valves.* (a) The tank must be equipped with one or more safety valves mounted on expansion dome. Total valve discharge capacity must be sufficient to prevent building up of pressure in the tank in excess of 45 pounds per square inch.

(b) One safety valve must be provided for each tank, or compartment thereof, of 6,650 gallons capacity or less, and two safety valves for each tank, or compartment thereof, of over 6,650 gallons capacity.

(c) Each safety valve must be set to open at a pressure of 25 pounds per square inch. (For tolerance see paragraph 18.)

(d) Tanks used for the transportation of corrosive liquids, inflammable solids, oxidizing materials, or poisonous liquids or solids, Class B, need not be equipped with safety valves, but if not so equipped must have one safety vent at least 2 inches inside diameter closed with a frangible disc of lead or other suitable material, of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within eight hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch may be applied. All tanks equipped with vents must be stenciled "Not for Inflammable Liquids."

15. *Fixtures, reinforcements, and attachments not otherwise specified.* (a) All attachments to tank and dome must be riveted in place and calked to comply with conditions prescribed in paragraphs 6 and 8, or applied by other approved means of at least equal strength and efficiency. Heater systems, when installed,

must be so constructed that the breaking off of their external connections will not cause leakage of contents of tanks.

16. *Plugs for openings.* (a) All plugs must be solid, of good grade cast iron or equivalent, with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs when inserted from the outside of tank heads must have the letter "S" at least $\frac{3}{8}$ inch in size stamped with steel stamp or cast on the outside surface to indicate the plug is solid. Plugs when inserted from the inside are identified by appearance of the plug on the outside of the tank as being solid—therefore, no mark required.

17. *Tests of tanks.* (a) Each tank must be tested, before being put into service, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 60 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety valves or safety vents, must be in place while test is made.

(b) Test of interior heater systems. Before interior heater systems are placed in service they must be tested with hydrostatic pressure and must be tight at 200 pounds per square inch.

18. *Tests of safety valves.* (a) Each valve must be tested, before being put into service, by attaching to an air line and applying pressure. The valve must not leak below 20 pounds pressure. (See Note sec. 31 (k) of Interstate Commerce Commission's regulations.) The valve must open at the pressure prescribed in paragraph 14 (c), with a tolerance of plus or minus 3 pounds.

19. *Retests of tanks, safety valves, and interior heater systems.* (a) Tanks, safety valves, and interior heater systems must be retested, as prescribed for original tests in paragraphs 17 and 18, at intervals of ten years or less after the original test. Tanks must also be retested before being returned to service after any repairs requiring extensive riveting or calking. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

20. *Marking.* (a) Each tank must be marked, thus certifying that the tank complies with all the requirements of this specification. These marks must be as follows:

(b) ICC-103 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high by the party assembling the completed car.

(c) Initials of tank builder and date of original test of tank in letters and

figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped mark specified in paragraph 20 (b).

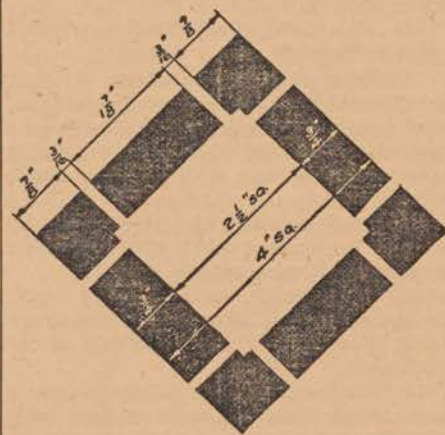
(d) Initials of company and date of additional tests performed by the party assembling the completed car, in those cases where the tank builder does not complete the fabrication of tank, such as application of riveted anchors, etc., in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped marks specified in paragraph 20 (c) by the party assembling the completed car. These marks must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high immediately below the stenciled mark specified in paragraph 20 (b) by the party assembling the completed car.

(e) Date on which the tank was last tested, pressure to which tested, place where last tested, pressure to which tested, stenciled on the tank, or jacket if lagged.

(f) Date on which the safety valves were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the tank, or jacket if lagged.

(g) Date on which interior heater systems were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the tank, or jacket if lagged.

(h) Identification mark, illustrated below, for approved manhole closure must be stenciled on each side of dome, or jacket if lagged in line with the ladders and in a color contrasting to color of dome.



Manhole Closure Identification Mark
(Reduced Size)

(i) When a tank car and its appurtenances are designed and authorized for the transportation of a particular commodity only, the name of that commodity, followed by the word "only," or such other wording as may be required to indicate the limits of usage of the car, must be stenciled on each side of the tank, or jacket if lagged in letters at least 2 inches high, immediately above the stenciled mark specified in paragraph 20 (b).

21. *Reports.* (a) Before a tank car is placed in service, the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of alterations of or additions to tanks or equipment therefor from original design and construction, there must be furnished to the same parties a report in detail of the alterations or additions made to each tank covered by a particular application, showing the initials and number of each tank involved. Reports of retests must be rendered to the Bureau of Explosives and car owner.

**SPECIFICATION 103A—RIVETED STEEL TANKS
TO BE MOUNTED ON OR TO FORM PART OF
A CAR**

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 103, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 103):

8. (b) All seams, including those formed by attachment of expansion dome and other external projections, must be calked both inside and outside, except that inside calking of the seam formed by attachment of expansion dome to tank, when tank sheet is not cut out to full diameter of dome, is not required and outside calking of seams formed by attachment of all external projections, except the expansion dome, is not required. When the opening in tank shell is cut out to the full diameter of the dome, inside calking of the seam formed by attachment of expansion dome to tank is required. All rivet heads on inside of tank must be calked. Split calking prohibited.

9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 1 percent of the total capacity of the tank and dome combined, except that when safety vent is applied to side of dome, the effective capacity of dome must be measured from top of safety vent opening in the side of dome to inside top of shell of tank.

(b) The opening in manhole ring must be at least 16 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit calking of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit calking, the tank shell at this point must be adequately reinforced. When the tank shell is not cut

out to permit calking and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required but the joint between the base of the dome and the tank shell must be sealed on the inside in an approved manner and dome pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

(c) The dome head if of pressed steel must be dished convex outward. The entire dome with attachments, or dome head and manhole ring with attachments, made of cast steel or other malleable metal may be used in place of dished steel plate dome head.

10. *Closures for manholes.* (a) The manhole cover must be of approved type, and designed to provide a secure closure of the manhole.

(c) Requirements of this paragraph optional.

11. *Gauging, venting, loading and discharging, and air inlet devices extending through dome of tanks.* (a) These devices when installed must be tightly closed as prescribed in paragraph 12. Protective housings not required, except when the characteristics of the commodity for which the car is authorized are such that these devices must be equipped with valves to provide for the loading and unloading of the contents. Discharging (siphon) pipes must be securely anchored.

12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) These devices when installed must be tightly closed with approved caps, plugs, valves, or other fittings. Provision must be made for closing pipe connections of valves. The venting device must be equipped as prescribed in paragraph 14.

13. *Bottom discharge outlets.* (a) Bottom outlet for discharge of lading prohibited, but tank may be equipped with a bottom washout nozzle of metal not subject to rapid deterioration by the lading, which must be of approved construction complying with the following requirements:

(b) The construction and closure of the bottom washout nozzle must be such that it is liquid tight and should the nozzle be broken, loss of contents will not occur.

(c) The extreme projection of the bottom washout nozzle must be at least 12 inches above the top of rail.

14. *Safety vents.* (a) Safety valves prohibited, but a safety vent must be applied.

(b) and (c) These paragraphs do not apply.

(d) Each tank or each compartment thereof must be equipped with one safety vent at least 2 inches inside diameter, closed with a frangible disc of lead or other suitable material of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within eight hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety

vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch, may be applied.

18. (a) This paragraph does not apply.

19. *Retests of tanks and interior heater systems.* (a) Tanks and interior heater systems must be retested as prescribed for original tests in paragraph 17, except that acid may be used for filling the tank and dome when testing tanks which have not been in service more than 12 years. The first retest of tank and heater system must be conducted within four years after the original test, and subsequent retests at four-year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Tanks in service over 12 years must be internally inspected and heater systems inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tanks must also be retested before being returned to service after extensive riveting, calking, or other repairs. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

20. (b) ICC-103A in letters and figures at least $\frac{3}{16}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high.

(f) This paragraph does not apply.

(h) This paragraph does not apply.

SPECIFICATION 103B—RUBBER-LINED RIVETED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 103, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 103):

3. *Material.* (a) All plates for tank and expansion dome must be made of open-hearth boiler plate steel of flange quality. All external projections must be made of materials specified herein-after. Rivets must be of the same quality as used for steam boilers and other pressure vessels.

(b) Each tank, or each compartment thereof, must be lined with acid-resisting rubber, vulcanized or bonded directly or otherwise attached to the metal tank, to provide a nonporous laminated lining. No rubber shall be under tension when applied except that due to conformation over rivet heads. Interior of tank must be free from scale, oxidation, moisture, and all foreign matter during the lining operation.

4. (b) Tank must be lined with rubber at least $\frac{3}{32}$ inch thick, except that over all rivets and tank seams the lining must

be double thickness. The lining must overlap at least $1\frac{1}{2}$ inches at all edges, which must be straight and be beveled to an angle of approximately 45 degrees. Directly under the dome, vulcanized to the lining on bottom of tank, must be applied a rubber reinforcement pad at least $4\frac{1}{2}$ feet square and at least $\frac{1}{2}$ inch thick, with edges of pad beveled to an angle of approximately 45 degrees. An opening in this pad for sump is permitted.

6. (b) All seams formed in the manufacture of the tank and expansion dome proper and the attachment of the expansion dome to the tank must be double riveted. Dome head, manhole ring, safety vent flange, and sump must be single or double riveted. Riveted seams and joints must be made metal to metal without interposition of other material with the exception that the use of two liners not to exceed 1 inch in width and $\frac{1}{16}$ inch in thickness, placed at an angle across the longitudinal seams between two rows of rivets near the internal tank heads on compartment cars to prevent the liquid from passing along the longitudinal seams from one compartment to another while cars are being water tested, will be permissible. The efficiency of double-riveted seams must be at least 70 percent of the strength of the thinnest plate specified in paragraph 4. The efficiency of single-riveted seams must be at least 45 percent of the strength of the thinnest plate specified in paragraph 4. Use of rivets less than $\frac{3}{8}$ inch nominal diameter not permissible on any part of tank or attachments. All rivet heads on inside of tank must be of uniform size, button head or similar shape, and the under surface of heads must be driven tight against shell.

8. (b) All seams, including those formed by attachment of expansion dome and other external projections, must be calked both inside and outside, except that inside calking of the seam formed by attachment of expansion dome to tank, when tank sheet is not cut out to full diameter of dome, is not required and outside calking of seams formed by attachment of all external projections, except the expansion dome, is not required. When the opening in tank shell is cut out to full diameter of dome, inside calking of seam formed by attachment of expansion dome to tank is required. All plates and castings on inside of tank must be calked. All projecting edges of plates, castings, and rivet heads on inside of tank must be rounded and free from fins and other irregular projections. Castings must be free from porosity. Split calking prohibited.

9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 1 percent of the total capacity of the tank and dome combined, except that when safety vent is applied to side of dome, the effective capacity of dome

must be measured from top of safety vent opening in the side of dome to inside top of shell of tank.

(b) The opening in manhole ring, before lining, must be at least 18 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit calking of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit calking, the tank shell at this point must be adequately reinforced. When the tank shell is not cut out to permit calking and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required. Dome pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

(c) The dome head if of pressed steel must be dished convex outward. The entire dome with attachments, or dome head and manhole ring with attachments, made of cast steel or other malleable metal may be used in place of dished steel plate dome head.

10. *Closures for manholes.* (a) The manhole cover must be of approved type, and designed to provide a secure closure of the manhole.

(b) Manhole cover may be made of any suitable metal. The top, bottom, and edge of manhole cover must be covered with rubber as prescribed in paragraphs 3 and 4. Through bolt holes may be lined with rubber at least $\frac{1}{8}$ inch in thickness. Cover made of metal not affected by lading need not be rubber covered. All rubber surfaces on outside of tank or fittings must be painted with an age-resisting paint to protect the rubber from light rays.

(c) Requirements of this paragraph optional.

11. *Gauging, venting, loading and discharging, and air inlet devices extending through dome of tanks.* (a) These devices when installed must be tightly closed in an approved manner. Protective housing not required, except when the characteristics of the commodity for which the car is authorized are such that these devices must be equipped with valves to provide for the loading and unloading of the contents. Discharging (siphon) pipes must be securely anchored.

12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) When installed, these devices and their closures must be of metal and have all surfaces covered with rubber as prescribed in paragraphs 3 and 4. These devices when made of metal not affected by the lading need not be rubber covered. Interior pipes of these devices must be supported at their lower end.

13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited, but tank may be equipped with a sump.

(b) and (c). These paragraphs do not apply.

14. *Safety vents.* (a) Safety valves prohibited, but a safety vent must be applied.

(b) and (c). These paragraphs do not apply.

(d) Each tank, or each compartment thereof, must be equipped with one safety vent, lined with rubber of at least $\frac{1}{8}$ inch thickness, having an inside diameter of at least $1\frac{3}{4}$ inches after lining, closed with a frangible disc of lead or other suitable material of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within 8 hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch, may be applied.

15. *Fixtures, reinforcements, and attachments not otherwise specified.*—(a) All attachments to tank and dome must be riveted in place and calked to comply with conditions prescribed in paragraphs 6 and 8, or applied by other approved means of at least equal strength and efficiency. Heater systems, when installed, must be so constructed that the breaking off of their external connections will not cause leakage of contents of tanks. All surfaces of attachments exposed to the lading must be covered with rubber as prescribed in paragraphs 3 and 4. Attachments made of metal not affected by the lading need not be rubber covered. Interior heater systems when applied must be made of metal not affected by the lading.

16. *Plugs for openings.*—(a) All plugs must be solid, of good grade cast iron or equivalent with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs must have all surfaces exposed to the lading covered with rubber or be made of metal not affected by lading.

17. *Tests of tanks.*—(a) Each tank must be tested, before rubber lining is applied, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 60 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety vents, must be in place while test is made. After tank is rubber-lined, no further tests are required.

18. (a) This paragraph does not apply.

19. *Retests of tanks and interior heater systems.* (a) Periodic retests of tanks are not required. Tanks must be retested before rubber lining is renewed. The first retest of heater systems must be conducted within four years after the original test, and subsequent retests at four-

year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Heater systems in service over 12 years must be inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tanks must also be retested before being returned to service after any repairs requiring riveting or calking of rivets. Heater systems must be retested after repairs. Report must be rendered as prescribed in paragraph 21.

20. (b) ICC-103B in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high.

(c) "Rubber-lined tank—pressure test not required", stenciled on tank, or jacket if lagged, instead of record of test of tank.

(f) This paragraph does not apply.

(h) This paragraph does not apply.

21. *Reports.* (a) Before a tank car is placed in service, the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of alterations or additions to tanks and equipment therefor from original design and construction, a similar report must be rendered to the same parties. Reports of retests must be rendered to the Bureau of Explosives and to car owner.

(b) Before a tank car tank not originally built under this specification is lined with rubber, a report certifying that the tank and its equipment have been brought into compliance with the tank requirements of Specification 103B must be furnished by car owner to the party who is to apply the rubber lining. A copy of this report, together with report in approved form certifying that tank has been lined in compliance with all requirements of this specification, must be furnished by party lining the tank to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads.

SPECIFICATION 103C—RIVETED ALLOY STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 103, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 103):

3. *Material.* (a) All plates and rivets, and all projections and their closures, must be made of a metal capable of resisting the action of nitric acid as follows:

The maximum corrosion rate in inches penetration per month in the standard

boiling 65% nitric acid test shall be 0.006 for the straight chromium-bearing stainless steels containing 15 to 18% chromium and 0.0015 for any of the chromium nickel alloys of the 18% chromium 8% nickel type and modified chromium nickel type, this figure to be an average of five 48-hour periods.

8. (b) All seams, including those formed by attachment of expansion dome and other external projections, must be calked both inside and outside. All rivet heads on inside of tank must be calked. Split calking prohibited.

9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 1 percent of the total capacity of the tank and dome combined.

(b) The opening in manhole ring must be at least 18 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit calking of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit calking, the tank shell at this point must be adequately reinforced. When the tank shell is not cut out to permit calking and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required but the joint between the base of the dome and the tank shell must be sealed on the inside in an approved manner and dome pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

(c) A dome head and manhole ring in one piece may be used instead of a dished plate dome head.

10. *Closures for manholes.* (a) The manhole cover must be of approved type, and designed to provide a secure closure of the manhole.

(b) Manhole rings and covers must be made of the metal prescribed in paragraph 3.

(c) Requirements of this paragraph optional.

11. *Gauging, venting, loading and discharging, and air inlet devices extending through dome of tanks.* (a) These devices when installed must be tightly closed as prescribed in paragraph 12 and be of approved design. Protective housing of approved design covering all these devices must be installed. Discharging (siphon) pipes must be securely anchored.

12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) These devices when installed must be tightly closed with approved caps, plugs, valves, or other suitable fittings. Provision must be made for closing pipe connections of valves.

13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited but tank may be equipped with a sump.

(b) and (c) These paragraphs do not apply.

14. *Safety valves.* (a) The tank must be equipped with a safety valve at least 2 inches inside diameter mounted on top of expansion dome.

(b) One safety valve must be provided for each tank.

(c) The safety valve must be set to open at a pressure of 45 pounds per square inch. (For tolerance see paragraph 18.)

(d) This paragraph does not apply.

15. *Fixtures, reinforcements, and attachments not otherwise specified.* (a) All attachments to tank and dome must be riveted in place and calked to comply with conditions prescribed in paragraphs 6 and 8.

16. *Plugs for openings.* (a) All plugs must be solid, made of materials prescribed in paragraph 3, with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs when inserted from the outside of tank heads must have the letter "S" at least $\frac{3}{8}$ inch in size stamped with steel stamp or cast on the outside surface to indicate the plug is solid. Plugs when inserted from the inside are identified by appearance of the plug on the outside of the tank as being solid—therefore, no mark required.

17. (b) This paragraph does not apply.

18. *Tests of safety valves.* (a) Valve must be tested before being put into service, by attaching to an air line and applying pressure. The valve must open at the pressure prescribed in paragraph 14 (c), with a tolerance of minus 3 pounds.

19. *Retests of tanks and safety valves.* tested as prescribed for original tests in paragraphs 17 and 18, except that acid may be used for filling tank and dome when testing tanks which have not been in service more than 12 years. The first retest must be conducted within four years after the original test, and subsequent retests at four-year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Tanks in service over 12 years must be internally inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tanks must also be retested before being returned to service after extensive riveting, calking, or other repairs. Reports must be rendered as prescribed in paragraph 21.

20. (b) ICC-103C in letters and figures at least $\frac{3}{8}$ inch high, stamped plainly and permanently into the metal near the center of both outside heads of the tank. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high.

20. (g) This paragraph does not apply.

20. (h) This paragraph does not apply.

SPECIFICATION 104—LAGGED RIVETED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

Specification effective January 1, 1941

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 103, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 103):

1. (b) The tank shell and dome must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.225 B. T. U. per square foot, per degree Fahrenheit differential in temperature, per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight.

11. *Gauging, bottom outlet valve operating, venting, loading and discharging, and air inlet devices extending through dome of tanks.* (a) Venting and loading and discharging devices of approved design must be installed. Gauging, bottom outlet valve operating and air inlet devices are not specification requirements. These devices when installed, including their valves, must be protected from accidental injury by being set into a securely covered recess, or by means of a cast or pressed steel or malleable iron housing with cover securely attached. Openings in wall of housing must be equipped with screw plugs or other closures. Drain holes permitting. Discharging (siphon) pipes must be securely anchored.

In connection with sec. 10 (c) the following additions are made to specification 104:

14. (e) Tanks used for the transportation of inflammable liquids or other commodities having vapor pressure exceeding 27 pounds per square inch, absolute, at 100° F., and not exceeding 40 pounds per square inch, absolute, at 100° F., must have the safety valves set to open at a pressure of 35 pounds per square inch. (For tolerance see par. 18.)

17. *Tests of tanks.* (a) Each tank must be tested, before being put into service and before lagging is applied, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 60 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety valves or safety vents, must be in place while test is made.

18. (b) Each valve on tank cars used for the transportation of inflammable liquids or other commodities having vapor pressures exceeding 27 pounds per square inch, absolute, at 100° F., and not exceeding 40 pounds per square inch, absolute, at 100° F., must be tested, before being put into service, by attaching to

an air line and applying pressure. The valve must not leak below 28 pounds per square inch, gage pressure. The valve must open at the pressure prescribed in par. 14 (e), with a tolerance of plus or minus 3 pounds.

19. *Retests of tanks, safety valves, and interior heater systems.* (a) Tanks, safety valves, and interior heater systems must be retested, as prescribed for original tests in paragraphs 17 and 18, at intervals of ten years or less after the original test. Tanks must also be retested before being returned to service after any repairs requiring extensive riveting or calking. If the jacket and lagging are not removed, the tank must hold the prescribed pressure for at least 20 minutes. A drop in pressure shall be evidence of leakage, and such portion of the jacket and lagging must be removed as may be necessary to locate the leak and make repairs. After the repairs have been made, the tank must again be subjected to the prescribed test. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

20. (b) ICC-104 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank. This mark must also be stenciled on the jacket, in letters and figures at least 2 inches high.

SPECIFICATION 104A—LAGGED RIVETED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited.

(b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. T. U. per square foot, per degree Fahrenheit differential in temperature, per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell.

2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal seam, must be at least 495 pounds per square inch.

3. *Material.* (a) All plates for tank and expansion dome must be made of open-hearth boiler plate steel of flange

quality. These plates may also be clad with other metals, such as nickel, etc. All external projections must be made of materials specified hereinafter. Rivets must be of the same quality as used for steam boilers and other pressure vessels. When clad plates are used, the rivet heads inside the tank must be clad with the same material or rivets may be of the same cladding material, provided rivets have physical properties at least equivalent to rivets prescribed herein. Tanks made of clad plates must be stenciled "Tank clad with ----- (naming material)."

4. *Thickness and width of plates.* (a) The minimum thickness of plates, including thickness of each plate at rivet seams, must be as follows:

Inside diameter of tanks	Bottom sheets	Shell sheets	Tank heads
	Inch	Inch	Inch
87 inches or under.....	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{13}{16}$
Over 87 to 96 inches.....	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$

(b) The minimum thickness of clad plates, where cladding material has physical properties at least equal to that of the base plate prescribed in paragraph 3, must be as prescribed in the above table. Where the cladding material does not have physical properties at least equal to that of the base plate prescribed in paragraph 3, minimum thickness of base plate must be as prescribed in the above table.

(c) The minimum width of bottom sheet of tank must be 60 inches, measured on the arc, but in all cases the width must be sufficient to bring the entire width of the longitudinal seam, including overlaps, above the cradle.

5. *Dishing of tank heads.* (a) Tank heads must be of approved contour.

6. *Riveting.* (a) For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. All rivets must be driven hot.

(b) All seams formed in the manufacture of the tank and the attachment of manhole nozzle to tank must be double-riveted. Riveted seams and joints must be made metal to metal without interposition of other material. The efficiency of the double riveted seams must be at least 70 percent of the strength of the thinnest plate.

7. *Tank mounting.* (a) The manner in which tank is supported on and securely attached to the car structure must be approved.

8. *Preparation for calking and calking.* (a) The edges of plates at all riveted seams must be beveled so that the angle of the calking edges will be between 60 and 70 degrees with the flat surface of the plate. The extreme calking edge distance, measured from center line of rivet hole, must be at least one and one-half times the diameter of the hole and not more than that distance plus $\frac{1}{4}$ inch.

(b) All seams must be calked inside and outside. Split calking prohibited.

9. *Expansion dome.* (a) Expansion dome prohibited.

10. *Closures for manholes.* (a) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other appurtenances mounted thereon, must be made tight against vapor pressure.

11. *Manhole nozzle, cover, and protective housing.* (a) Manhole nozzle must be of cast, forged, or pressed steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

(b) Manhole cover must be of forged or rolled steel at least $2\frac{1}{4}$ inches thick, machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

(c) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weather-proof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with approved riveted pin or rod with nuts and cotter pins. Openings in wall of housing must be equipped with screw plugs or other closures.

(d) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

12. *Venting, loading and discharging, gauging and sampling devices.* (a) These devices must be of approved type, made of metal not subject to rapid deterioration by the lading, and must withstand a pressure of 100 pounds per square inch without leakage. The venting, loading and discharging valves must be directly bolted to seatings on manhole cover. Pipe connections of valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement. Thermometer well and sampling valve must be installed and closed with screw plugs or valves.

(b) The interior pipes of the liquid and gas discharge valves must be equipped with check valves.

(c) Gauging device, sampling valve, check valves and thermometer well are not specification requirements on tanks used for the transportation of commodities other than those classed as liquefied compressed gases.

13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited.

14. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The

total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 75 pounds per square inch.

(b) The safety valves must be set to open at a pressure of not exceeding 75 pounds per square inch. (For tolerance see paragraph 18.)

15. *Fixtures, reinforcements, and attachments, not otherwise specified.* (a) Attachments, other than the tank anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not subject to rapid deterioration by the lading.

17. *Tests of tanks.* (a) Each tank must be tested, before being put into service, and before lagging is applied, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 100 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety valves, must be in place while test is made.

(b) Tests of exterior heater systems not a specification requirement.

18. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 75 pounds per square inch and be vapor-tight at 60 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

19. *Retests of tanks and safety valves.* (a) Tanks and safety valves must be retested, as prescribed for original tests in paragraphs 17 and 18, at intervals of five years or less after the original test. Tanks must also be retested before being returned to service after any repairs requiring extensive riveting or calking. If the jacket and lagging are not removed, the tank must hold the prescribed pressure for at least 20 minutes. A drop in pressure shall be evidence of leakage, and such portion of the jacket and lagging must be removed as may be necessary to locate the leak and make repairs. After the repairs have been made, the tank must again be subjected to the prescribed test. Reports must be rendered as prescribed in paragraph 21.

20. *Marking.* (a) Each tank must be marked, thus certifying that the tank complies with all the requirements of this specification. These marks must be as follows:

(b) ICC-104A in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and

figures at least 2 inches high by the party assembling the completed car.

(c) Initials of tank builder and date of original test of tank in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped mark specified in paragraph 20 (b).

(d) Initials of company and date of additional tests performed by the party assembling the completed car, in those cases where the tank builder does not complete the fabrication of tank, such as application of riveted anchors, etc., in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped marks specified in paragraph 20 (c) by the party assembling the completed car. These marks must also be stenciled on the jacket in letters and figures at least 2 inches high immediately below the stenciled mark specified in paragraph 20 (b) by the party assembling the completed car.

(e) Date on which the tank was last tested, pressure to which tested, place where test was made, and by whom, stenciled on the jacket.

(f) Date on which the safety valves were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the jacket.

(g) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraphs 20 (c) and (d). This mark must also be stenciled on the jacket immediately below the dome platform and directly behind the ladder, or ladders if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of tank
000,000 pounds.

(h) When a tank car and its appurtenances are designed and authorized for the transportation of a particular commodity only, the name of that commodity, followed by the word "only", or such other wording as may be required to indicate the limits of usage of the car, must be stenciled on each side of the jacket, in letters at least 2 inches high, immediately above the stenciled mark specified in paragraph 20 (b).

21. *Reports.* (a) Before a tank car is placed in service, the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of alterations or additions to tanks or equipment therefor from original design and construction, there must be furnished to the same parties a report in detail of the alterations or additions made to each tank covered by a

particular application, showing the initials and number of each tank involved. Reports of retests must be rendered to the Bureau of Explosives and car owner.

SPECIFICATION 105A300—LAGGED FORGED LAP-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

2. *Material.* (a) All plates for the tank must be made of open-hearth boiler plate steel of flange quality for forge welding.

3. *Thickness of plates.* (a) The wall thickness must be at least $\frac{3}{4}$ inch in the cylindrical portion when inside diameter of tank does not exceed 87½ inches. When inside diameter exceeds 87½ inches, the wall thickness in the cylindrical portion must be calculated by the following formula:

$$\text{Wall thickness in inches} = \frac{300 \times \text{inside diameter in inches}}{35,000}$$

(b) Opening in tank for manhole nozzle must be reinforced in an approved manner.

(c) Tank heads must be at least as thick at all points as wall of tank.

4. *Dishing of tank heads.* (a) Tank heads must be of approved contour.

5. *Weldings.* (a) All seams must be lap-welded by the water gas process, hammered or rolled, or other lap-weld hammered or rolled process which investigation and laboratory tests by the Mechanical Division of the Association of American Railroads have proved will produce equivalent or superior results.

(b) All seams must be stress-relieved after welding.

6. *Tank mounting.* (a) The manner in which tank is supported on and securely attached to the car structure must be approved.

7. *Manhole nozzle, cover, and protective housing.* (a) Manhole nozzle must be of forged or rolled steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

(b) Manhole cover must be of forged or rolled steel at least 2¼ inches thick machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

(c) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a

steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with an approved riveted pin or rod with nuts and cotter pins. Openings in wall of housing must be equipped with screw plugs or other closures.

(d) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

8. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 300 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

(b) The interior pipes of the liquid and gas discharge valves, except as prescribed in paragraphs 8 (c) and (d), may be equipped with check valves of an approved design.

(c) Tanks for use in the transportation of chlorine must have the interior pipes of the liquid discharge valves equipped with check valves of an approved design.

(d) Tanks for use in the transportation of liquefied hydrocarbon and liquefied petroleum gases must have the interior pipes of the liquid and gas discharge valves equipped with check valves of an approved design.

9. *Gauging device, sampling valve and thermometer well.* (a) These fittings are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 300 pounds per square inch without leakage. Interior pipes of the gauging device and sampling valve must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

10. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 225 pounds per square inch.

(b) The safety valves must be set to open at a pressure of not exceeding 225 pounds per square inch. (For tolerance see paragraph 14.)

11. *Fixtures, reinforcements, and attachments not otherwise specified.* (a)

Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

12. *Lagging.* (a) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than .075 B. t. u. per square foot, per degree Fahrenheit differential in temperature, per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weather-tight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell.

13. *Tests of tanks.* (a) Each tank must be tested after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity having a temperature which must not exceed 100° F. during test, and applying a pressure of 300 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

(b) After anchor rivet covers are in place these covers must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

(c) Calking of welded joints to stop leaks developed during the foregoing tests prohibited. Correction of leaks or defects which develop during original construction must be made as prescribed in paragraph 5. Should leaks or defects develop after tank has been placed in service, repairs must be made as provided in sec. 31 (b) (2) of the regulations.

14. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 225 pounds per square inch and be vapor-tight at 180 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

15. *Retests of tanks, anchor rivet covers, and safety valves.* (a) Tanks must be retested to a pressure of 300 pounds per square inch, as prescribed in paragraph 13 (a), except that the anchor rivet covers must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet covers must be retested to a pressure of 100 pounds per square inch, as prescribed in paragraph 13 (b); and safety valves must be retested to a pressure as prescribed in paragraphs 10 (b) and 14.

(b) All retests must be made, except as prescribed in paragraph 15 (c), at intervals of five years or less. Tanks must also be retested before being returned to service after any repairs requiring welding.

(c) Tanks used for the transportation of chlorine must be retested as prescribed in paragraph 15 (a) at intervals of two years or less.

(d) Report of retests must be rendered as prescribed in paragraph 17.

16. *Marking.* (a) Each tank must be marked, thus certifying that the tank complies with all the requirements of this specification. These marks must be as follows:

(b) ICC-105A300 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

(c) Initials of tank builder and date of original test of tank in letters and figures at least $\frac{3}{8}$ inch high, stamped plainly and permanently into the metal immediately below the stamped mark specified in paragraph 16 (b).

(d) Initials of company and date of additional tests performed by the party assembling the completed car, in those cases where the tank builder does not complete the fabrication of tank, such as application of riveted anchors, etc., in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped marks specified in paragraph 16 (c) by the party assembling the completed car. These marks must also be stenciled on the jacket in letters and figures at least 2 inches high immediately below the stenciled mark specified in paragraph 16 (b) by the party assembling the completed car.

(e) Date on which the tank was last tested, pressure to which tested, place where test was made, and by whom, stenciled on the jacket.

(f) Date on which the safety valves were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the jacket.

(g) Water capacity of the tanks in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraphs 16 (c) and (d). This mark must also be stenciled on the jacket immediately below the dome platform and directly behind the ladder, or ladders if there is a ladder on each side of the tank, in letters and figures at least 2 inches high, as follows:

Water capacity of tank
000,000 pounds

(h) When a tank car and its appurtenances are designed and authorized for the transportation of a particular commodity only, the name of that commodity, followed by the word "only", or such other wording as may be required to indicate the limits of usage of the car, must be stenciled on each side of the jacket, in letters at least 2 inches high, immediately above the stenciled mark specified in paragraph 16 (b).

17. *Reports.* (a) Before a tank car is placed in service the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of alterations of or additions to tanks or equipment therefor from original design and construction or of repairs, there must be furnished to the same parties a report in detail of the repairs, alterations, or additions made to each tank covered by a particular application, showing the initials and number of each tank involved and stating that heat-treatment called for by the particular type of repair authorized has been performed and that after repairs, alterations, or additions the tests prescribed in paragraph 15 (a) were made, results of hydrostatic tests reported, and tanks marked as prescribed in paragraph 16 (e). Reports of retests must be rendered to the Bureau of Explosives and car owner.

SPECIFICATION 105A400—LAGGED FORGED LAPWELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 105A300, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 105A300):

3. *Thickness of plates.* (a) The wall thickness must be at least $\frac{3}{4}$ inch in the cylindrical portion when inside diameter of tank does not exceed 65½ inches. When inside diameter exceeds 65½ inches, the wall thickness in the cylindrical portion must be calculated by the following formula:

$$\text{Wall thickness in inches} = \frac{400 \times \text{inside diameter in inches}}{35,000}$$

8. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 400 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

9. *Gauging device, sampling valve, and thermometer well.* (a) These fittings are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 400 pounds per square inch without leakage. Interior pipes of gauging device and sampling valve must be equipped with check valves of an approved design. Thermometer well must be closed with a screw plug.

10. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 300 pounds per square inch.

(b) The safety valves must be set to open at a pressure of not exceeding 300 pounds per square inch. (For tolerance see paragraph 14.)

13. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 400 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

14. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 300 pounds per square inch and the vapor-tight at 240 pounds per square inch, which limiting pressure must not be affected by any auxiliary closure or other combination.

15. *Retests of tanks, anchor rivet covers, and safety valves.* (a) Tanks must be retested to a pressure of 400 pounds per square inch, as prescribed in paragraph 13 (a), except that the anchor rivet covers must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet covers must be retested to a pressure of 100 pounds per square inch, as prescribed in paragraph 13 (b); and safety valves must be retested to a pressure as prescribed in paragraphs 10 (b) and 14.

16. (b) ICC-105A400 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

SPECIFICATION 105A500—LAGGED FORGED LAPWELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 105A300, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 105A300):

3. *Thickness of plates.* (a) The wall thickness must be at least $\frac{3}{4}$ inch in the cylindrical portion when inside diameter of tank does not exceed 52½ inches.

When inside diameter exceeds 52½ inches, the wall thickness in the cylindrical portion must be calculated by the following formula:

$$\text{Wall thickness in inches} = \frac{500 \times \text{inside diameter in inches}}{35,000}$$

8. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 500 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

9. *Gauging device, sampling valve, and thermometer well.* (a) These fittings are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 500 pounds per square inch without leakage. Interior pipes of gauging device and sampling valve must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

10. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 375 pounds per square inch.

(b) The safety valves must be set to open at a pressure of not exceeding 375 pounds per square inch. (For tolerance see paragraph 14.)

(c) Tanks for use in the transportation of liquefied carbon dioxide must be equipped with one safety valve of approved design set to open at a pressure not exceeding 375 pounds per square inch and one frangible disc device of approved design set to function at a pressure less than the test pressure of the tank. The discharge capacity of each of these safety devices must be sufficient to prevent building up of pressure in tank in excess of 375 pounds per square inch. Tanks must also be equipped with two pressure-regulating valves of approved design, one set to open at 300 pounds per square inch pressure and one set to open at 333 pounds per square inch pressure. Each pressure-regulating valve and safety device must have its final discharge piped to the outside of the dome.

12. (d) Tanks for use in the transportation of liquefied carbon dioxide must have tank shell and manhole nozzle lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.03 B. t. u. per square foot, per degree F. differential in temperature per hour. The entire insulation must be covered with a metal

jacket, efficiently flashed around all openings so as to be weather tight.

13. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 500 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

14. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 375 pounds per square inch and be vapor-tight at 300 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

15. *Retests of tanks, anchor rivet covers, and safety valves.* (a) Tanks must be retested to a pressure of 500 pounds per square inch, as prescribed in paragraph 13 (a), except that the anchor rivet covers must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet covers must be retested to a pressure of 100 pounds per square inch, as prescribed in paragraph 13 (b); and safety valves must be retested to a pressure as prescribed in paragraphs 10 (b) and 14.

16. (b) ICC-105A500 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

SPECIFICATION 105A600—LAGGED FORGED LAPWELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 105A300, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 105A300):

3. *Thickness of plates.* (a) The wall thickness must be at least $\frac{3}{4}$ inch in the cylindrical portion when inside diameter of tank does not exceed 43½ inches. When inside diameter exceeds 43½ inches, the wall thickness in the cylindrical portion must be calculated by the following formula:

$$\text{Wall thickness in inches} = \frac{600 \times \text{inside diameter in inches}}{35,000}$$

8. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and

must withstand a pressure of 600 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

9. *Gauging device, sampling valve, and thermometer well.* (a) These fittings are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 600 pounds per square inch without leakage. Interior pipes of gauging device and sampling valve must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

10. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 450 pounds per square inch.

(b) The safety valves must be set to open at a pressure of not exceeding 450 pounds per square inch. (For tolerance see paragraph 14.)

(c) Tanks for use in the transportation of liquefied carbon dioxide must be equipped with one safety valve of approved design set to open at a pressure not exceeding 450 pounds per square inch and one frangible disc device of approved design set to function at a pressure less than the test pressure of the tank. The discharge capacity of each of these safety devices must be sufficient to prevent building up of pressure in tank in excess of 450 pounds per square inch. Tanks must also be equipped with two pressure-regulating valves of approved design, one set to open at 360 pounds per square inch pressure and one set to open at 400 pounds per square inch pressure. Each pressure-regulating valve and safety device must have its final discharge piped to the outside of the dome.

12. (b) Tanks for use in the transportation of liquefied carbon dioxide must have tank shell and manhole nozzle lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.03 B. t. u. per square foot, per degree F. differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weather tight.

13. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 600 pounds per square inch. The tank must hold the prescribed pres-

sure for at least 30 minutes without leakage or distress.

14. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 450 pounds per square inch and be vapor-tight at 360 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

15. *Retests of tanks, anchor rivet covers, and safety valves.* (a) Tanks must be retested to a pressure of 600 pounds per square inch, as prescribed in paragraph 13 (a), except that the anchor rivet covers must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet covers must be retested to a pressure of 100 pounds per square inch, as prescribed in paragraph 13 (b); and safety valves must be retested to a pressure as prescribed in paragraphs 10 (b) and 14.

16. (b) ICC-105A600 in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

SPECIFICATION 106A500—FORGED LAPWELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

1. *Type and general requirements.* (a) Tanks built under this specification must be cylindrical, with heads dished convex inward. All openings must be located in the heads. Tanks must be securely attached to car structure in such a manner that they may be removed for filling by the consignor and emptying by the consignee. Each tank must have a capacity of at least 1,600 pounds of water and not more than 2,600 pounds of water.

(b) The tanks must be fabricated by approved methods.

(c) For tanks made in foreign countries, a chemical analysis of material and all tests as specified must be carried out within the limits of the United States under the supervision of a competent and disinterested inspector.

2. *Material.* (a) All plates for tank must be made of uniform open-hearth steel of good welding quality, free from cracks, laminations, or other defects injurious to the finished tank, and have an elastic limit of not more than 45,000 pounds per square inch and an elongation of at least 20 percent in 8 inches; a test specimen must also bend cold through 180 degrees flat on itself without cracking on the outside of the bent portion; the tensile and bend test specimens must be taken from the finished rolled material, and there must be at least one tensile test and one bend test on specimens from each heat. Chemical analysis must show

maximum content percent not greater than as follows: Carbon, 0.20; phosphorus, 0.04; sulphur, 0.05.

(b) All plates must have their heat number and the name or brand of the manufacturer legibly stamped on them at the rolling mill.

3. *Thickness of plates.* (a) The wall thickness of tanks must be at least $\frac{13}{32}$ inch and must be such that at the test pressure the calculated fiber stress in wall of tank will not be in excess of 17,500 pounds per square inch, as calculated by the following formula:

$$S = \frac{P(1.3D^2 + 0.4d^2)}{D^2 - d^2}$$

where

P is interior test pressure in pounds per square inch; D, outside diameter in inches; d, inside diameter in inches; and S, wall stress in pounds per square inch.

(b) Tank heads must be of a thickness sufficient to meet the test requirements of paragraph 11 and to provide for the threading of openings therein as prescribed in paragraph 4 (b).

4. *Tank heads.* (a) The heads must be hot pressed, flanging and dishing being done in one heat, so as to make a flange at least 4 inches deep and a radius of dish not greater than the diameter of the tank. They must be inserted into the tank shell with flange extending outward and must have a snug driving fit into the shell.

(b) Threads for openings in tank heads for valves and vents must be American Standard taper, tapped to gauge, clean cut, even and without checks, to insure tight joints.

5. *Welding and heat treatment.* (a) All joints and seams must be made by the water gas lap-weld process, or other lap-weld process which investigation and laboratory tests by the Mechanical Division of the Association of American Railroads have proved will produce equivalent or superior results. All joints and seams must be thoroughly hammered or rolled to insure perfect welds. The flanges of the heads must be forge lap-welded to the shell and then crimped inwardly toward the axis line at least 1 inch on the radius. Welding and crimping must be accomplished in one heat.

(b) Each finished tank, before being subjected to the hydrostatic test, must be uniformly and properly heat-treated by heating to a temperature of at least 1,200° F. to remove any undue strains due to processes of manufacture.

(c) Repairs of leaks detected in manufacture or test must be made by the same process as employed in manufacture of tank. Calking, soldering, or similar repairing, prohibited.

6. *Anchorage.* (a) The manner in which tanks are supported on and securely attached to the car structure must be approved.

7. *Protective housing and cover.* (a) Valves and other closures of openings in tank heads, except fusible plug vents, must be protected against accidental in-

jury by a detachable cast or pressed steel housing at least $\frac{1}{4}$ inch thick, which must not project beyond the flanged ends of the tank and must be securely fastened to tank head. Housing must be provided with an opening having an area equal to the total safety valve or vent discharge area.

(b) The upper head of tanks mounted vertically on the car structure must be completely covered by a light metal cover designed to exclude moisture, cinders, and other foreign matter, and to be displaced by pressure of gas discharged through safety valves or vents.

8. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 500 pounds per square inch without leakage. The valves must be screwed directly into tank heads or attached to tank heads by other approved methods. Provision must be made for closing the pipe connections of the valves.

9. *Safety valves and vents.* (a) The tank must be equipped with one or more safety valves or vents of approved type, made of metal not subject to rapid deterioration by the lading and screwed directly into tank heads or attached to tank heads by other approved methods. The total valve or vent discharge capacity must be sufficient to prevent building up of pressure in tank in excess of $\frac{3}{4}$ of the test pressure; when safety vents of the fusible plug type are used, the required discharge capacity must be available in each head.

(b) Tanks mounted vertically on the car structure must have safety valves, or vents of the frangible disc type, which must be located on the upper head.

(c) Safety valves must be set to open and vents of the frangible disc type must function at a pressure of not exceeding 375 pounds per square inch. Vents of the fusible plug type must function at a temperature of not exceeding 175° F. (For tolerance see paragraph 12.)

10. *Fixtures.* (a) Siphon pipes and their couplings on the inside of the tank head and lugs on the outside of the tank head for attaching the valve protection housing may be fusion welded in place, provided they are properly heat-treated in accordance with paragraph 5 (b) at the time the entire tank is heat-treated. All other fixtures and appurtenances, except as provided for in paragraphs 6, 7, 8, and 9, are prohibited.

11. *Tests of tank.* (a) After heat treatment tanks must be subjected to hydrostatic test in a water jacket, or by other accurate method, operated so as to obtain reliable data. No tank shall have been subjected previously to internal pressure within 100 pounds of the test pressure.

(b) Each tank must be tested to 500 pounds per square inch.

(c) Pressure must be maintained for 30 seconds and sufficiently longer to insure complete expansion of tank. Pressure

gauge must permit reading to accuracy of 1 percent. Expansion gauge must permit reading of total expansion to accuracy of 1 percent. Expansion must be recorded in cubic centimeters.

(d) Permanent volumetric expansion must not exceed 10 percent of total volumetric expansion at test pressure.

(e) Each finished tank must be subjected to interior air pressure test of at least 100 pounds per square inch under conditions favorable to detection of any leakage. No leaks shall appear.

12. *Tests of safety valves and vents.*

(a) Each valve must be tested by air or gas before being put into service and also at intervals as prescribed in paragraph 13. The valve must open at a pressure of not exceeding 375 pounds per square inch and be vapor-tight at 300 pounds per square inch which limiting pressures must not be affected by any auxiliary closure or other combination.

(b) For safety vents of the frangible disc type, a sample of the discs used must burst at a pressure of not exceeding 375 pounds per square inch and be vapor-tight at 300 pounds per square inch.

(c) For safety vents of the fusible plug type, a sample of the fusible plugs used must function at a temperature of not exceeding 175° F. and be vapor-tight at a temperature of 130° F.

13. *Retests, alterations, and upkeep of tanks, safety valves, and vents.* (a) Each tank must be subjected, at least once every 5 years, to the test as prescribed in paragraph 11. A tank must be condemned when it leaks or when the permanent expansion exceeds 10 percent of the total expansion. Report giving data showing the results of these tests must be rendered by party making tests to the owner of tank and to the Bureau of Explosives, and each tank passing the test must be marked with the date (month and year) plainly and permanently stamped into the metal of one head or chime. For example, 1-38 for January, 1938. Dates of previous tests must not be obliterated.

(b) Safety valves must be retested, at least once every 2 years, in the manner prescribed in paragraph 12 (a). Safety vents of the frangible disc and fusible plug types must be inspected after each loaded trip of tank as follows: Remove at least one vent for visual inspection and if it shows signs of deterioration, all the vents on the tank must be removed and inspected and those which do not meet the requirements must be renewed.

(c) All prescribed markings on tanks must be kept legible. Copy of the said markings, in letters and figures of the prescribed size stamped on a brass plate secured to the tank, is authorized. Markings must not be changed except as follows:

(1) By application of additional marks not affecting the test pressure or water capacity; these must not obliterate previously applied marks.

(2) By application of test pressure marks, or alteration of such marks, to

indicate a reduced test pressure; authorized only for tanks that have not failed in the 5-year test.

(3) By change of serial numbers or ownership marks, or both; report in sufficient detail so that previous serial number and ownership mark can be determined for each tank, arranged by lot numbers or by consecutive serial numbers, must be filed with the Bureau of Explosives.

14. *Marking.* (a) Each tank must be plainly and permanently marked, thus certifying that the tank complies with all the requirements of this specification. These marks must be stamped into the metal of one head or chime, in letters and figures at least $\frac{3}{8}$ inch high, as follows:

(b) ICC-106A500.

(c) Serial number (immediately below foregoing).

(d) Inspector's official mark (immediately below serial number).

(e) Name, mark (other than a trademark), or initials of company or person for whose use the tanks are being made, which must be recorded with the Bureau of Explosives.

(f) Date of tank test (month and year), such as 1-38 for January, 1938, so placed that dates of subsequent tests may easily be added thereto.

(g) Water capacity—0000 pounds.

15. *Inspection and reports.* (a) Purchaser of tanks must provide for inspection by a competent inspector as follows:

(1) The inspector must carefully inspect all plates from which tanks are to be made, and records pertaining thereto, and plates which do not comply with the requirements of this specification must be rejected.

(2) The inspector must secure complete certified records, including chemical analyses and physical tests on samples taken from each heat of steel used in the manufacture of the plate.

(3) The inspector must report capacity in pounds of water and tare weight of each tank and the minimum thickness of tank wall noted.

(4) The inspector must make such inspection as may be necessary to see that all the requirements of this specification are fully complied with, must see that the finished tanks are properly heat-treated, and must witness all air and hydrostatic tests.

(5) The inspector must stamp his official mark on each accepted tank immediately below the serial number, and make certified report (see paragraph (b)) to the builder, to the company or person for whose use the tanks are being made, to the builder of the car structure on which the tanks are to be mounted, if any, to the Bureau of Explosives, and to the Secretary, Mechanical Division, Association of American Railroads.

(b) Inspector's report required herein must be in the following form:

(Place) _____
(Date) _____

STEEL TANKS

Built for _____ Company
Location at _____
Built by _____ Company
Location at _____
Consigned to _____ Company
Location at _____
Quantity _____
Size _____ inches outside diameter by _____ inches long.

Marks stamped into the head or chime of the tank are:

Specification ICC _____
Serial numbers _____ to _____ inclusive
Inspector's mark _____
Owner's mark _____
Test date _____
Water capacity (See Record of Hydrostatic Tests) _____
Tare weights (Yes or No) (See Record of Hydrostatic Tests) _____
These tanks were made by process of _____

The steel used was identified as indicated by the attached list showing the serial number of each tank, followed by the heat number of the plate, head, and bottom used in the tank.

The steel used was verified as to chemical analysis and record thereof is attached hereto. The heat numbers were stamped into the metal.

All material, such as plates, billets, and seamless tubing, was inspected and each tank was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the tank. The processes of manufacture and heat treatment of tanks were supervised and found to be efficient and satisfactory.

The tank walls were measured and the minimum thickness noted was _____ inch. The outside diameter was determined by a close approximation to be _____ inches. The wall stress was calculated to be _____ pounds per square inch under an internal pressure of _____ pounds per square inch.

Hydrostatic tests, bend and tensile tests of material, and other tests, as prescribed in this specification were made in the presence of the inspector and all material and tanks accepted were found to be in compliance with the requirements of this specification. Records thereof are attached hereto.

I hereby certify that all of these tanks proved satisfactory in every way and comply with the requirements of Interstate Commerce Commission Specification No. _____

(Signed) _____
(Inspector)
(Place) _____
(Date) _____

RECORD OF CHEMICAL ANALYSIS OF STEEL FOR TANKS

Numbered _____ to _____ inclusive.
Size _____ inches outside diameter by _____ inches long.
Made by _____ Company.
For _____ Company.

Heat No.	Chemical Analysis						
	C	P	S	Si	Mn	Ni	Cr

The analyses were made by
(Signed) _____

(Place) _____
(Date) _____

RECORD OF TENSILE TESTS OF MATERIAL IN TANKS

Numbered _____ to _____ inclusive.
Size _____ inches outside diameter by _____ inches long.
Made by _____ Company.
For _____ Company.

Heat No.	Yield point (pounds per square inch)	Tensile strength (pounds per square inch)	Elongation (percent in 8 inches)	Reduction of area (percent)	Bend test

(Signed) _____
(Place) _____
(Date) _____

RECORD OF HYDROSTATIC TESTS ON TANKS

Numbered _____ to _____ inclusive.
Size _____ inches outside diameter by _____ inches long.
Made by _____ Company.
For _____ Company.

Serial No. of tanks tested	Actual test pressure (pounds per square inch)	Total expansion (c. c.)*	Permanent expansion (c. c.)*	Percent ratio of permanent expansion to total expansion	Tare weight—pounds**	Capacity in pounds of water

(Signed) _____

*If the tests are made by a method involving the measurement of the amount of liquid forced into the tank by the test pressure, then the basic data, on which the calculations are made, such as the pump factors, temperature of liquid, coefficient of compressibility of liquid, etc., must also be given.

**Do not include protective housing and cover but state whether with or without valves.

(c) Before a tank built under this specification is placed in service, the builder must furnish to the owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in proper form certifying that the tank and its equipment comply with all the requirements of this specification including information as to the serial numbers, dates of test, and ownership marks on the tanks.

In the event the owner of the tank instead of the builder elects to furnish the appurtenances such as valve protection caps, loading and unloading valves, and safety valves or vents of the frangible disc or fusible plug type, the owner must furnish to the Bureau of Explosives and to the Secretary, Mechanical Division,

Association of American Railroads, a report in proper form certifying that these appurtenances comply with all the requirements of this specification.

In case of alteration of or additions to tanks or equipment therefor from original design and construction or of repairs, there must be furnished to the owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in detail of the repairs, alterations, or additions made to each tank covered by a particular application, showing the serial number of each tank involved and stating that heat-treatment called for by the particular type of repair authorized has been performed and that after repairs, alterations, or additions the tests prescribed in paragraph 11 were made, results of hydrostatic tests reported, and tanks marked as prescribed in paragraph 13.

Reports of retests must be rendered to the Bureau of Explosives and tank owner.

SPECIFICATION 106A800 — FORGED LAP-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. General requirements. Tanks built under this specification must comply with all provisions of Specification 106A500, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 106A500):

8. Venting, and loading and discharging valves. (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 800 pounds per square inch without leakage. The valves must be screwed directly into tank heads or attached to tank heads by other approved methods. Provision must be made for closing the pipe connections of the valves.

9. (c) Safety valves must be set to open and vents of the frangible-disc type must function at a pressure of not exceeding 600 pounds per square inch. Vents of the fusible plug type must function at a temperature of not exceeding 175° F. (For tolerance see paragraph 12.)

11. (b) Each tank must be tested to 800 pounds per square inch.

12. Tests of safety valves and vents. (a) Each valve must be tested by air or gas before being put into service and also at intervals as prescribed in paragraph 13. The valve must open at a pressure of not exceeding 600 pounds per square inch and be vapor tight at 480 pounds per square inch which limiting pressures must not be affected by any auxiliary closure or other combination.

(b) For safety vents of the frangible disc type, a sample of the discs used must burst at a pressure of not exceeding 600 pounds per square inch and be vapor tight at 480 pounds per square inch.

14. (b) ICC-106A800.

SPECIFICATION 107A**—SEAMLESS STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR**

(Specification effective January 7, 1941)

1. Type and general requirements. (a) Tanks built under this specification must be hollow forged or drawn in one piece. Forged tanks must be machined inside and outside before ends are necked down and, after necking down, the ends must be machined to size on the ends and outside diameter.

(b) Tanks must be fabricated by approved methods.

(c) For tanks made in foreign countries, chemical analysis of material and all tests as specified must be carried out within the limits of the United States under supervision of a competent and disinterested inspector; in addition to which, provisions of paragraph 15 (b) and (c) of this specification must be carried out at the point of manufacture by a recognized inspection bureau with principal office in the United States.

(d) The terms "marked end" and "marked test pressure" used throughout this specification are defined as follows: "Marked end" is that end of the tank on which marks prescribed in paragraph 14 are stamped.

"Marked test pressure" is that pressure in pounds per square inch which is indicated by the figures substituted for the **** in the marking ICC-107A**** stamped on the marked end of tank.

(e) The gas pressure at 130° F. in the tank must not exceed $\frac{1}{10}$ of the marked test pressure of the tank.

2. Material. (a) Tanks must be made from open hearth or electric steel of uniform quality. Material must be free from seams, cracks, laminations, or other defects injurious to finished tank. Forgings and seamless tubing for bodies of tanks must be stamped with heat numbers.

(b) Steel must conform to the following requirements as to chemical composition:

	Carbon steel percent	Alloy steel percent
Carbon.....	not over... 0.55	*0.50
Manganese.....	not over... .80	*1.65
Phosphorus, acid.....	not over... .05	.05
basic.....	not over... .04	.04
Sulphur, acid.....	not over... .06	.06
basic.....	not over... .05	.05
*Sum of manganese and carbon	not over... ..	2.10

Steel containing other alloying elements may be used if approved.

For instructions as to the obtaining and checking of chemical analysis, see paragraph 15 (b) 3.

(c) Each necked-down tank must be uniformly and properly heat treated. Heat treatment must consist of annealing or normalizing and drawing. Heat treatment involving the use of liquid quenching medium is prohibited, except under special approval. All scale must be removed from inside and outside of tank

to an extent sufficient to allow proper inspection.

(d) Physical tests must be made on two test specimens 0.505 inch in diameter within 2-inch gage length, taken 180° apart, one from each ring section cut from each end of each forged or drawn tube before necking down, or one from each prolongation at each end of each necked-down tank. These test specimen ring sections or prolongations must be heat treated with the necked-down tank which they represent. The width of the test specimen ring section must be at least its wall thickness. Only when diameters and wall thickness will not permit removal of 0.505 by 2-inch tensile test bar, laid in the transverse direction, may test bar cut in the longitudinal direction be substituted.

(e) Elastic limit, as determined by extensometer, must not exceed 70 percent of tensile strength. Determination shall be made at cross head speed of not more than 0.125 inch per minute with an extensometer reading to 0.0002 inch. The extensometer shall be read at increments of stress not exceeding 5,000 pounds per square inch. The stress at which the strain first exceeds

$$\frac{\text{stress (pounds per square inch)}}{30,000,000 \text{ (pounds per square inch)}} \text{ plus } 0.005 \text{ (inches per inch)}$$

shall be recorded as the elastic limit.

Elongation must be at least 20 percent and reduction of area at least 35 percent.

NOTE: Upon approval, the ratio of elastic limit to ultimate strength may be raised to permit use of special alloy steels of definite composition that will give equal or better physical properties than steels herein specified.

3. Thickness of wall. (a) Minimum thickness of wall of each finished tank must be at least one-half inch and also such that at a pressure equal to $\frac{1}{10}$ of the marked test pressure of the tank the calculated fiber stress in pounds per square inch at inner wall of of tank multiplied by 3.6 will not exceed the tensile strength of any specimen taken from the tank and tested as prescribed in paragraph 2 (d).

(b) Calculations to determine the maximum marked test pressure permitted to be marked on the tank must be made by the formula:

$$P = \frac{10 S (D^2 - d^2)}{7 (D^2 + d^2)}$$

where

P = Maximum marked test pressure permitted.

$$S = \frac{U}{3.6}$$

where

U = Tensile strength of that specimen which shows the lower tensile strength of the two specimens taken from the tank and tested as presented in paragraph 2 (d).

3.6 = Factor of safety.

$D^2 - d^2$ = The smaller value obtained for this factor by the operations specified in paragraph 3 (c).

(c) Measure at one end, in a plane perpendicular to the longitudinal axis of the tank and at least 18 inches from that end before necking down—

d = Maximum inside diameter (inches) for the location under consideration; to be determined by direct measurement to an accuracy of 0.05 inch.

t = Minimum thickness of wall for the location under consideration; to be determined by direct measurement to an accuracy of 0.001 inch.

Take $D = d + 2t$.

Calculate the value of $\frac{D^2 - d^2}{D^2 + d^2}$

Make similar measurements and calculation for a corresponding location at the other end of the tank.

Use the smaller result obtained, from the foregoing, in making calculation prescribed in paragraph 3 (b).

4. *Necked-down ends of tank.* (a) Each end must be closed by a cover made of forged steel. Covers must be secured to ends of tank by through bolts or studs not entering interior of tank. Covers must be of a thickness sufficient to meet test requirements of paragraph 10 and to compensate for the openings closed by attachments prescribed herein.

It is also provided that each end may be closed by internal threading to accommodate an approved fitting. The internal threads as well as the threads on fittings for these openings shall be clean cut, even, without checks, and tapped to gauge. Taper threads are required and must be of a length not less than as specified for American Standard taper pipe threads. External threading of an approved type shall be permissible on the internal threaded ends.

(b) Loading and discharging valve or valves must be mounted on the cover or threaded into the marked end of tank. Safety devices must be mounted on the cover or threaded into the opposite end of the tank. If fittings are mounted on a cover, they must be of the flanged type.

(c) Joints between covers and ends and between cover and attachments must be of approved form and made tight against vapor or liquid leakage by means of a confined gasket of suitable material.

5. *Anchorage.* (a) The manner in which tanks are supported on and securely attached to car structure must be approved.

6. *Protective housing.* (a) Safety devices, and loading and discharging valves on tanks must be protected from accidental injury by approved metal housing, arranged so it may be readily opened to permit inspection and adjustment of safety devices and valves, and securely locked in closed position. Housing must be provided with opening having area equal to twice the total discharge area of safety devices inclosed.

7. *Loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading or in service, and

must withstand without leakage a pressure equal to the marked test pressure of tank. Provision must be made for closing service outlet of valves.

8. *Safety devices.* (a) Tank must be equipped with one or more safety devices of approved type and discharge area, made of metal not subject to rapid deterioration by the lading or in service. Total discharge capacity must be such that, with tank filled with air at pressure equal to 70 percent of the marked test pressure of tank, discharge capacity will be sufficient to reduce air pressure to 30 percent of the marked test pressure within three minutes after safety devices open.

(b) Safety devices must open at pressure not exceeding the marked test pressure of tank and not less than $\frac{7}{10}$ of marked test pressure. (For tolerance for safety valves, see paragraph 12 (a).)

(c) Cars used for the transportation of inflammable gases must have the safety devices equipped with an approved ignition device.

9. *Fixtures.* (a) Attachments, other than those mounted on tank covers or serving as threaded closures for the ends of the tank, are prohibited.

10. *Tests of tanks.* (a) After heat treatment, tanks must be subjected to hydrostatic tests in a water jacket, or by other accurate method, operated so as to obtain reliable data. No tank shall have been subjected previously to internal pressure greater than 90 percent of the marked test pressure.

(b) Each tank must be tested to a pressure at least equal to the marked test pressure of the tank.

(c) Pressure must be maintained for 30 seconds, and sufficiently longer to insure complete expansion of tank. Pressure gage must permit reading to accuracy of one percent. Expansion gage must permit reading of total expansion to accuracy of one percent. Expansion must be recorded in cubic centimeters.

(d) Permanent volumetric expansion must not exceed 10 percent of total volumetric expansion at test pressure.

11. *Handling of tanks failing in tests.* (a) Tanks rejected for failure in any of the tests prescribed may be reheated, and will be acceptable if subsequent to reheat treatment they are subjected to and pass all of the tests.

12. *Tests of safety devices.* (a) Safety devices of valve type must be tested by air or gas before being put into service and also at intervals as prescribed in paragraph 13 (b). Valve must open at pressure not exceeding the marked test pressure of tank and must be vapor tight at 80 percent of the marked test pressure. These limiting pressures must not be affected by any auxiliary closure or other combination.

(b) For safety devices of frangible disc type, samples of discs used must burst at pressure not exceeding the marked test pressure of tank and not less than $\frac{7}{10}$ of marked test pressure. (See also paragraph 13 (b).)

13. *Retests, alterations, and upkeep of tanks and safety devices.* (a) Each tank must be subjected at least once every five years to test prescribed in paragraph 10 (a), (b), (c) and (d). A tank must be condemned when it leaks or when permanent expansion exceeds 10 percent of total expansion. Reports giving data showing results of these tests must be rendered by party making tests to owner of tank and to the Bureau of Explosives, and each tank passing test must be marked with date (such as 1-38, for January, 1938) plainly and permanently stamped into metal of marked end. Dates of previous tests must not be obliterated.

(b) Tanks used for transportation of inflammable gases must have their safety devices of valve type retested at least once every two years in manner prescribed in paragraph 12 (a); when safety devices of frangible disc type are used, one from each car must be tested every two years as prescribed in paragraph 12 (b).

(c) All prescribed markings on tanks must be kept legible. Markings must not be added to or changed, except as follows:

1. By application of additional marks not affecting the marked test pressure or water capacity; these marks must not obliterate prescribed marks previously applied.

2. By application of test pressure marks, or alteration of such marks, to indicate reduced marked test pressure; authorized only for tanks that have not failed in 5-year test.

3. By change of serial numbers or ownership marks, or both, in which case report, in sufficient detail so that previous serial number and ownership mark can be determined for each tank, and arranged by lot numbers or by consecutive serial numbers, must be filed with the Bureau of Explosives.

14. *Marking.* (a) Each tank must be plainly and permanently marked, thus certifying that tank complies with all requirements of this specification. These marks (Note 1) must be stamped into metal of necked-down section of tank at marked end, in letters and figures at least $\frac{3}{8}$ inch high, as follows:

NOTE 1: When these markings are obscured by the anchorage structure or otherwise, they must also be duplicated by stamping into the cover on marked end of tank, or on a brass plate permanently secured to this cover. In either case, the serial number of the tank must also be stamped into the face of the tank end so as to be readily visible when cover bearing markings is removed. Where closure is not effected by a cover, the serial number must be duplicated on the end of the tank so as to be readily visible in the completed assembly while duplication of other markings must be in an approved manner.

(b) ICC-107A****, the **** to be replaced by figures indicating the marked test pressure of the tank. This pressure must not exceed the calculated maximum marked test pressure permitted, as determined by the formula in paragraph 3 (b).

The analyses were made by _____
(Signed) _____
(Place) _____
(Date) _____

RECORD OF TENSILE TESTS OF MATERIAL IN TANKS

Numbered _____ to _____
inclusive
Size _____ inches outside diameter by _____
inches long.
Built by _____ Company
For _____ Company

Heat No.	Tanks represented by test (serial Nos.)	Elastic limit (pounds per square inch)	Tensile strength (pounds per square inch)	Elongation (percent in 2 inches)	Reduction of area (percent)

(Signed) _____
(Place) _____
(Date) _____

RECORD OF HYDROSTATIC TESTS ON TANKS

Numbered _____ to _____
inclusive.
Size _____ inches outside diameter by _____
inches long.
Built by _____ Company
For _____ Company

Serial Nos. of tanks	Actual test pressure (pounds per square inch)	Total expansion (c. c.)	Permanent expansion (c. c.)	Percent ratio of permanent expansion to total expansion*	Tare weight (pounds)**	Capacity in pounds of water at 60° F.

*If tests are made by method involving measurement of amount of liquid forced into tank by test pressure, then the basic data on which calculations are made, such as pump factors, temperature of liquid, coefficient of compressibility of liquid, etc., must also be given.

**Do not include protective housing, but state whether with or without valves.

(Signed) _____
(Place) _____
(Date) _____

RECORD OF GENERAL DATA ON TANKS

Numbered _____ to _____
inclusive
Built by _____ Company
For _____ Company

Serial No. of tank	Data obtained as prescribed in par. 3 (c)				Larger value of the factor $\frac{D_1 + d^2}{D_1 - d^2}$	(S) Calculated fiber stress in lbs. per sq. in. at $\frac{3}{16}$ marked test pressure	Marked test pressure in lbs. per sq. in. stamped in tank	Minimum tensile strength of material in lbs. per sq. in. recorded
	Min. thickness of wall in inches	Max. inside diameter in inches	Calculated value of $\frac{D}{d}$ in inches = $d + 2t$	Min. thickness of wall in inches				

(Signed) _____

SHIPPING CONTAINER SPECIFICATION 103-W—FUSION-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

This specification covers ICC Class 103-W tank cars to which have been added A.A.R. details which are not inconsistent therewith.

I.C.C. Specification effective January 7, 1941.

A.A.R. Specification effective January 7, 1941.

ICC-1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward, and must have at least one expansion dome with manhole, and such other external projections as are prescribed herein. When the interior of the tank is divided into compartments, each compartment must have two heads dished convex outward, one expansion dome with manhole, and such other external projections as are prescribed herein.

AAR-1. *Lagging.* (a) Not a specification requirement. If applied, the tank shell and dome must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.225 B. t. u. per square foot, per degree Fahrenheit differential in temperature, per hour.

AAR-1. (b) Before lagging is applied the tank surfaces to be lagged and the inside surface of the metal jacket shall be painted with paint which is not affected by the lading.

AAR-1. (c) The barrel, ends and dome of tank, except seating of tanks on bolster and pads of fixtures, shall be lagged with insulating material.

AAR-1. (d) The lagging throughout shall be covered with a metal jacket not less than $\frac{1}{8}$ inch in thickness.

AAR-1. (e) Openings through lagging shall be flashed around projections to prevent admission of water. Top of dome shall be so constructed that liquids cannot enter between dome wall and outer shell.

ICC-2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint, must be at least 300 pounds per square inch.

AAR-2. *Thickness of plates.* (a) The wall thickness in the cylindrical portion of the tank must be calculated by the following formula but in no case shall the wall thickness be less than that specified in par. ICC-4.

$$t = \frac{P \times d}{2 S \times E}$$

Where

t = thickness in inches of thinnest plate

P = calculated bursting pressure lbs. per sq. in.

d = inside diameter in inches

S = minimum ultimate tensile strength in lbs. per sq. in.

E = efficiency of longitudinal welded joint = 90 percent.

ICC-3. *Material.* (a) All plates for tank and expansion dome must be made of open-hearth boiler-plate steel of flange quality, the carbon content of which shall not exceed 0.30 percent. These plates may also be clad with other metals, such as nickel, etc.

ICC-3. (b) All external projections must be made of materials specified hereinafter.

ICC-3. (c) Rivets, if used, must be of the same quality as used for steam boilers and other pressure vessels. When clad plates are used and attachments are riveted the rivet heads inside the tank must be clad with the same material, or, rivets may be of the same cladding material provided rivets have physical properties at least equivalent to rivets prescribed herein.

ICC-3. (d) Tanks made of clad plates must be stenciled "Tank clad with (naming material)."

AAR-3. (a) All steel plates used must be in accordance with current A. A. R. Specification M-115 for Steel, Boiler and Firebox, for Locomotives (flange quality) the carbon content of which shall not exceed 0.30 percent.

AAR-3. *Lining.* (b) Not a specification requirement. If applied, must be approved as to material and method of application.

AAR-3. (c) All rivets must be in accordance with current A. A. R. Specifications M-110 for Boiler Rivet Steel and Boiler Rivets.

AAR-3. (d) Lined tanks must be stenciled on the tank, or jacket if lagged, in letters at least 2 inches high, immediately above the stenciled mark specified in paragraph ICC-20 (b). "_____ (naming material) lined tank."

ICC-4. *Thickness and width of plates.*

(a) The minimum thickness of plates must be as follows:

Inside diameter of tanks	Bottom sheets, inch	Shell sheets, inch	Expansion dome sheets, inch	Tank heads, inch	Expansion dome heads, inch	Interior compartment heads, inch
60 inches or under	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 60 to 78 inches	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 78 to 96 inches	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 96 to 112 inches	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{16}$
Over 112 to 122 inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{1}{2}$

ICC-4. (b) The minimum thickness of clad plates, where cladding material has physical properties at least equal to that of the base plate prescribed in paragraph 3 (a), must be as prescribed in the above table. Where the cladding material does not have physical properties at least equal to that of the base plate prescribed in paragraph 3 (a), minimum thickness of base plate must be as prescribed in the above table.

ICC-4. (c) The minimum width of bottom sheet of tank must be 60 inches, measured on the arc, but in all cases the

width must be sufficient to bring the entire width of the longitudinal welded joint, including welds, above the cradle.

ICC-4. (d) Expansion dome heads for domes exceeding 70 inches in diameter must have a minimum thickness of $\frac{3}{8}$ inch.

AAR-4. (a) For extreme diameter A. A. R. clearance requirements govern.

AAR-4. (b) For tanks built of one piece cylindrical sections, the thickness specified for bottom sheet must apply to the entire cylindrical shell.

AAR-4. (c) For tanks without under-frame the minimum thickness of bottom sheet must be not less than $\frac{3}{8}$ inch.

ICC-5. Dishing of tank heads. (a) Tank heads must be of approved contour.

AAR-5. (a) Tank heads must be dished for pressure on concave side and to main inside radius not exceeding 10 feet. The inside knuckle radius must be not less than $3\frac{3}{4}$ inches except for interior heads of compartment tanks the knuckle radius must be not less than $\frac{3}{4}$ inch.

ICC-6. Welding. (a) All joints must be fusion welded by a process which investigation and laboratory tests by the mechanical division of the Association of American Railroads have proved will produce satisfactory results.

ICC-6. (b) Manhole ring, safety valve flange, and bottom outlet nozzle flange or other attachments may be riveted or fusion welded. Riveted joints must be made metal to metal without interposition of other material. Rivets, if used, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{16}$ inch nominal diameter prohibited. Fusion-welding for securing these attachments in place must be of double-welded butt joint type or double-full-fillet-lap joint type.

ICC-6. Calking. (c) All attachments riveted to the tank must have the rivets and the joints formed by attachments calked on the inside of tank.

AAR-6. Welding. (a) Fusion welding to be performed by fabricators certified by Association of American Railroads as qualified to meet the requirements of this specification. All joints must be fabricated by means of fusion welding in accordance with the following requirements:

AAR-6. Definitions. (b-1). Fusion welding. A process of welding metals in the molten, or molten and vaporous state without the application of mechanical pressure or blows.

AAR-6 (b-2). Double-welded butt joint. A joint formed by the fusion of two abutting edges with a filler metal added from both sides of the joint and with reinforcement on both sides. (For permission to remove reinforcements see paragraph AAR-6 (m-1)).

Note: A joint with filler metal added from one side only is considered equivalent to a

double-welded butt joint when and if means are provided for accomplishing complete penetration and reinforcement on both sides of the joint.

AAR-6 (b-3). Full-fillet joint. A fusion weld of approximately triangular cross section the throat of which lies in a plane disposed approximately 45 degrees with respect to the surface of the parts joined, and built up to the full thickness of the plate or nozzle flange that is being joined to a parallel plate, having the throat not less than 0.7 the thickness of the edge of the plate being welded.

AAR-6 (b-4). Throat. The minimum thickness of a weld along a straight line passing through the bottom of the cross sectional space provided to contain a fusion weld.

AAR-6 (b-5). Single full-fillet-lap-joint. A single full-fillet-lap-joint is one in which the overlapped edges of two plates are full-fillet-welded along one edge only.

AAR-6 (b-6). Double full-fillet-lap-joint. A double full-fillet-lap-joint is one in which the overlapped edges of the plates to be joined are full-fillet-welded at the edge of each plate.

AAR-6 (b-7). Plug weld. A plug weld is one used to join two plates by welding through a hole in one of them to secure a bond and subsequently filling the hole with weld metal. Plug welds to be used only in conjunction with fillet welds.

AAR-6. Joint efficiency, maximum. (c) The efficiencies for computing the value of the various types of fusion-welded joints in tanks constructed in conformity with requirements of this specification shall not exceed the following:

Type of joint	Efficiency of joint, percent
Double-welded butt joint	90.0
Full-fillet joint	—
Single-full-fillet lap joint without plug welds (See fig. 21)	55.0
Single-full-fillet lap joint with plug welds (See fig. 20)	65.0
Double-full-fillet lap joint	65.0

NOTE: Strength of fillet welds shall be computed on the throat dimension of the triangular section, using the strength in shear and in conjunction with the stresses given below, multiplied by the joint efficiency given above.

For end welds, the maximum shear stresses shall be 80.0% of the tensile strength of the plate used.

For side welds, the maximum shear stresses shall be 60.0% of the tensile strength of the plate used.

For combined end and side welds, the maximum shear stresses shall be 70.0% of the tensile strength of the plate used.

Plug-weld. The maximum load on each plug weld shall be computed for either shear or tension by the following formula:

$$L = 0.63 (d - \frac{1}{4})^2 \times s$$

L = total maximum load in shear or tension on each plug weld in lbs.

d = diameter of the bottom of the hole in which the plug is made in inches.

s = maximum stress in shear or tension, as the case may be, in lbs. per sq. inch.

s for shear = 44,000

s for tension = 55,000

Welding must meet the following test requirements:

AAR-6. Test plates. (d-1) Two sets of test plates of the dimensions shown in figure 10 from steel of the same specifications and thickness as the shell plates, prepared for welded, may be attached to the shell plate being welded, as in figure 9, one set on each end of one longitudinal joint of each tank so that the edges to be welded in the test plates are a continuation of and duplication of the corresponding edges of the longitudinal joint. In this case the weld metal shall be deposited in the test plates continuously with the weld metal deposited in the longitudinal joint. As an alternate method, detached test plates may be welded as provided for in AAR-6 (d-2). The plates for test samples may be taken from any part of one or more plates of the same lot of material that is used in the fabrication of the welded tanks and without reference to the direction of the mill rolling. When more than one welding operator is employed on a car tank, the required test plates for the individual tanks shall be made by the welding operator designated by the inspector.

AAR-6. (d-2) When test plates are welded for the longitudinal joints none need be furnished for circumferential joints in the same tank provided the welding process, procedure and technique are the same. Where a tank has only circumferential joints, two sets of test plates of the same material as the shell shall be welded in the same way as the joints in question.

AAR-6. (d-3) The test plates shall be so supported that warping due to welding shall not throw the finished test plate out of line by an angle of over 5 degrees.

AAR-6. (d-4) Where the welding has warped the test plates they shall be straightened before being stress relieved. The test plates shall be subjected to the same stress-relieving operation as required by AAR-6 (p). At no time shall the test plates be heated to a temperature higher than that used for stress relieving the tank.

AAR-6. Test specimens. (e) The inspector shall select one of the two welded test plates from which the coupons for tension and bend tests and for specific-gravity determinations shall be removed as shown in figure 10 and be of the dimensions shown in figures 10 and 11.

AAR-6. Tension tests. (f-1) Two types of tension-test specimens are required, one of the joint and the other of the weld metal. The tension specimen of the joint shall be transverse to the

welded joint, and shall be the full thickness of the welded plate after the outer and inner surfaces of the weld have been machined to a plane surface flush with the plate.

AAR-6. (f-2) The tensile strength of the joint specimen in figure 10 shall not be less than the minimum of the specified tensile range of the plate used. (The tension test of the joint specimen as specified herein is intended as a test of the welded joint and not of the plate).

AAR-6. (f-3) The tension-test specimen of the weld metal shall be taken entirely from the deposited weld metal and shall meet the following requirements:

Tensile strength—at least that of the minimum of the range of the plate which is welded:

Elongation, minimum—20 percent in 2 inches.

For plate thicknesses less than $\frac{5}{8}$ inch, the all-weld-metal tension test may be omitted.

AAR-6. Bend tests. (g-1) The bend-test specimen shall be transverse to the welded joint of the full thickness of the plate and shall be of rectangular cross section with the width $1\frac{1}{2}$ times the thickness of the specimen. The inside and outside surfaces of the weld shall be machined to a plane surface flush with the plate. The edges of this surface shall be rounded to a radius not over 10 percent of the thickness of the plate. The specimen shall be bent cold under free bending conditions until the least elongation measured within or across approximately the entire weld on the outside fibers of the bend-test specimen is 30 percent.

AAR-6. (g-2). When a crack is observed in the convex surface of the specimen between the edges the specimen shall be considered to have failed and the test shall be stopped. Cracks at the corners of the specimen shall not be considered a failure. The appearance of small defects in the convex surface shall not be considered as a failure if the greatest dimension does not exceed $\frac{1}{16}$ inch.

AAR-6. Specific gravity of weld metal. (h) Specimens shall be taken from the weld metal of the joints. The specific-gravity specimens shall, if possible, be 2 inches long and $\frac{5}{8}$ inch in diameter, as shown in figures 10 and 11. The minimum specific gravity shall be 7.80.

AAR-6. Retests. (i-1) Should any of the tests other than the specific-gravity tests fail to meet the requirements by more than 10 percent, no retests shall be allowed.

AAR-6. (i-2) Should any of the tests other than the specific-gravity tests fail to meet the requirements by 10 percent or less, retests shall be allowed on specimens cut from the second welded test plate.

AAR-6. (i-3) The retests shall comply with the requirements. For either of the tension retests, two specimens shall be

cut from the second test plate, and both of these shall meet the requirements.

AAR-6. (i-4) When there is more than one specimen of the same type and when one or more of the group specimens fail to meet the requirements by 10 percent or less, the retest shall be made on an entire group of specimens which shall meet the requirements.

AAR-6. (i-5) Should the specific gravity obtained on the specific-gravity specimen be less than 7.75, no retest shall be allowed. Should the specific gravity lie between 7.75 and 7.80, a retest shall be allowed on specimen cut from the second test plate. The retest shall show a specific gravity of not less than 7.80.

AAR-6. Nondestructive tests. (j-1) All longitudinal and circumferential welded joints of the tank shell shall be examined throughout their entire length by the X-ray or the gamma-ray method of radiography. When a nozzle, expansion dome or fitting is attached to a tank by a flange or saddle inserted in and butt welded to the shell at the edge of the flange as shown in figure 22, the weld so made shall be radiographed. Radiographic examination of welds attaching other designs of nozzles, expansion domes or fittings to the tank shell may be omitted.

AAR-6. (j-2) Where excess metal is removed welded joints shall be prepared as follows: The weld reinforcements on both the inside and outside shall be ground, chipped and ground, or suitably machined to remove the irregularities of the weld surface so that it merges smoothly into the plate surface. The finished surface of the reinforcement may have a crown of uniform amount not to exceed approximately $\frac{1}{16}$ in.

AAR-6. (j-3) The films obtained by the use of X-rays shall be known as "exographs," and those obtained by the use of gamma rays as "gammagraphs." Both types of films shall be generally termed "radiographs."

AAR-6. (j-4) The weld shall be radiographed with a technique which will determine quantitatively the size of defects with thicknesses equal to and greater than 2 percent of the thickness of the base metal. To determine whether the radiographic technique employed is detecting defects of a thickness equal to and greater than 2 percent of the thickness of the base metal, suitable thickness gages or penetrameters shall be placed on the side of the plate nearest the source of radiation and used in the following manner:

(1) Where excess metal is removed flush a penetrameter of the type shown in figure 12-A shall be placed at each end of the exposed portion of the weld with the penetrameter parallel to the weld and at least $\frac{1}{4}$ " from the edge of the weld. These penetrameters shall be stepped as follows: 0.005" to 0.04", as shown in figure 12-A.

(2) Where excess metal is not removed a penetrameter of the type shown in

figure 12-B shall be placed at each end of the exposed portion of weld on or within $\frac{1}{8}$ " of plate surface parallel to the weld and at least $\frac{1}{4}$ " from the edge of the weld. The penetrameter shall be 0.136 (± 0.001 ") thick and slots of thickness shown in figure 12-B shall be present. When necessary, steel strips $\frac{5}{8}$ in. wide shall be placed below penetrameter, the thickness of the strip being sufficient to make the total thickness of penetrameter, strip, and plate equal to the average thickness of the weld, as shown in figure 12-B. The object of this requirement is to obtain the same film density for the images of the weld and penetrameter.

AAR-6. (j-5) In every case the thickness gages or penetrameters should be so placed that the thin edge of the gage or the shallow groove of the penetrameter will be adjacent to the end of the exposed section of the weld.

AAR-6. (j-6) The film during exposure shall be as close to the surface of the weld as is practicable. The distance of the film from the surface of the weld on the side opposite the source of radiation shall, if possible, not be greater than 1 inch. With the film not more than 1 inch from the weld surface the minimum distance between the source of radiation and the back of the weld shall be not less than 14".

AAR-6. (j-7) There shall also be a plain indication on each film showing the job number, the shell, or shell section, and seam, as well as the manufacturer's identification, symbol or name.

AAR-6. (j-8) If it is necessary to expose the film at a distance greater than 1 inch from the weld, the following ratio of:

Distance from source of radiation to weld surface toward radiation
Distance from weld surface toward radiation to film

shall be at least 7 to 1. When a grid of the Buckey type is employed to reduce scattered radiation, the above ratio may be reduced to five. These conditions are imposed so as to limit the allowable distortion and magnification of any defects in the welded seam.

AAR-6. (j-9) All radiographs shall be free from excessive mechanical processing defects which would interfere with proper interpretation of the radiograph.

AAR-6. (j-10) Identification markers, the images of which will appear on the film, shall be placed adjacent to the weld and their location accurately and permanently stamped near the weld on the outside surface of the shell, or shell section, so that a defect appearing on the radiograph may be accurately located in the actual weld.

AAR-6. (j-11) The radiographs shall be submitted to the inspector. If the inspector requests, the following data shall be submitted with the radiographs: (1) The thickness of the base metal, (2) the distance of the film from the surface of the weld, (3) the distance of the film from the source of radiation.

AAR-6. (j-12) The acceptability of welds examined by radiography shall be judged by comparing the radiographs with a standard set of radiographs which may be obtained by purchase from secretary, mechanical division, Association of American Railroads. In general the standards of judgment shall be:

(1) Welds in which the radiographs show elongated slag inclusions or cavities shall be unacceptable if the length of any such imperfection is greater than $\frac{1}{3} T$, where T is the thickness of the weld. If the lengths of such imperfections are less than $\frac{1}{3} T$ and are separated from each other by at least $6 L$ of acceptable weld metal, where L is the length of the longest imperfection, the weld shall be judged acceptable if the sum of the lengths of such imperfections is not more than T in a weld length of $12 T$.

(2) Welds in which the radiographs show any type of crack or zones of incomplete fusion shall be unacceptable.

(3) Welds in which the radiographs show porosity shall be judged as acceptable or unacceptable by comparison with the standard set of radiographs.

AAR-6. (j-13) A complete set of radiographs for each tank shall be retained for not less than 20 years by the tank builder or by the car owner if he so requests.

AAR-6. Qualification of welders. (k-1) The manufacturer shall be responsible for the quality of the welding done by his organization and shall conduct tests of welding operators to determine their ability to produce welds of the required quality.

AAR-6. (k-2) The manufacturer shall satisfy the inspector that all the welding operators employed on a car tank have previously made test plates which comply with the requirements of this specification. Such test plates shall have been made within a period of six months, except that when the welding operator is regularly employed on production work embracing the same process and type of welding the tests may be effective for one year.

AAR-6. (k-3) It is the duty of the inspector to satisfy himself that only welding operators who are proved competent by these test plates are used to weld any car tank and that all welding complies with the requirements of this specification.

AAR-6. (k-4) The inspector has the right at any time to call for and witness the making of welding operator's qualification test plates described in this paragraph by any welding operator, employed in connection with the inspector's contract and to observe the physical tests of the test plates. For such qualification tests the thickness of the test plate shall be approximately the thickness of the plate or parts on which the welding operator is to work.

AAR-6. (k-5) The tests conducted by one manufacturer shall not qualify a

welding operator to do work for any other manufacturer.

AAR-6. Preparation for welding.

(1-1) The plates may be cut to size and shape by machining or shearing, or by flame cutting. If shaped by flame cutting, the edges must be uniform and smooth and must be freed of all loose scale and slag accumulations before welding. The discoloration which may remain on the flame-cut surface is not considered to be detrimental oxidation. The plates or sheets to be joined shall be accurately cut to size and formed. In all cases the forming shall be done by pressure and not by blows, including the edges of the plates forming longitudinal joints of tanks.

AAR-6. (1-2) Particular care should be taken in the layout of joints in which fillet welds are to be used so as to make possible the fusion of the weld metal at the bottom of the fillet. Great care must also be exercised in the deposition of the weld metal so as to secure satisfactory penetration.

AAR-6. (1-3) If the thickness of the flange of a head to be attached to a tank shell by a butt joint exceeds the shell thickness by more than 25 percent (maximum $\frac{1}{4}$ inch), the flange thickness shall be reduced at the abutting edges either on the inside or the outside, as shown in figure 13 (b), or on both sides, as shown in figure 13 (a). Reduction of abutting edges as illustrated in figure 13 (c) is not permissible.

AAR-6. (1-4) The edges of the plates at the joints shall not have an offset from each other at any point in excess of 25 percent of the thickness of the plate (maximum $\frac{1}{8}$ inch).

AAR-6. (1-5) In all cases where plates of unequal thicknesses are abutted, and have offsets exceeding $1/16$ inch, the edge of the thicker plate shall be reduced in some manner so that it is approximately the same thickness as the other plate.

AAR-6. (1-6) Bars, jacks, clamps or other appropriate tools may be used to hold the edges to be welded in line. Tack welds may also be used to hold the edges in line, provided these tack welds are removed so that they do not become a part of the joint. The edges of butt joints shall be so held that they will not overlap during welding. Where fillet welds are used, the lapped plates shall fit closely and be kept together during welding.

AAR-6. (1-7) The surfaces of the sheets or plates to be welded shall be cleaned thoroughly of all scale, rust, oil or grease for a distance of not less than $\frac{1}{2}$ inch from the welding edge. Grease or oil may be removed with gasoline, lye, or the equivalent. A steel-wire scratch brush may be used for removing light rust or scale, but for heavy scale, slag, and the like, a grinder, chisel, air hammer, or other suitable tool shall be used to obtain clean and bright metal. When it is necessary to deposit metal over a

previously welded surface, any scale or slag therefrom shall be removed by a roughing tool, a chisel, an air chipping hammer, or other suitable means to prevent inclusion of impurities in the weld metal.

AAR-6. (1-8) The dimensions and shape of the edges to be joined shall be such as to allow thorough fusion and complete penetration.

AAR-6. (1-9) For double-welded butt joints the reverse sides shall be chipped, ground, or melted out so as to secure a clean surface of the originally deposited weld prior to the application of the first bead of welding on the second side. Such chipping, grinding, or melting out shall be done in a manner that will insure proper fusion of the weld metal. These requirements are not intended to apply to any process of welding by which proper fusion and penetration are otherwise obtained and no impurities remain at the base of the weld.

AAR-6. (1-10) If the welding is stopped for any reason, extra care shall be taken in re-starting to get full penetration to the bottom of the joint and thorough fusion between the weld metal and the plates, and to the weld metal previously deposited.

AAR-6. Longitudinal joints. (m-1) Longitudinal joints shall be of the double-welded butt type and shall be reinforced at the center of the weld on each side of the plate by at least $\frac{1}{16}$ inch up to and including $\frac{5}{8}$ -inch plate, and up to $\frac{1}{2}$ inch for heavier plates. The reinforcement may be removed but if not removed shall be built up uniformly from the surface of the plate to a maximum at the center of the weld. Particular attention is called, however, to the importance of the provision that there shall be no valley or groove along the edge of or in the center of the weld, but that the deposited metal must be fused smoothly and uniformly into the plate surface. (If the reinforcement is built up so as to form a ridge with a valley or depression at the edge of the weld next to the plate, the result is a notch which causes concentration of stress and reduces the strength of the joint. The finish of the welded joint shall be reasonably smooth and free from irregularities, grooves, or depressions.) Where a welded butt joint is made the equivalent of a double-welded butt joint (see note in paragraph AAR 6 (b-2)) by using a backing up strip and adding filler metal from one side only, the reinforcement shall not be less than $\frac{1}{16}$ inch.

AAR-6. (m-2) Where tanks are made up of two or more courses with welded longitudinal joints, the joints of adjacent courses shall be not less than 60 deg. apart.

AAR-6. Circumferential joints. (n) Circumferential joints shall be of the double-welded butt type. The details of all of these joints shall conform to the requirements of longitudinal joints given in AAR-6 (m-1).

AAR-6. Interior compartment heads. (o) When installed, interior compartment heads shall be secured in place by means of single-full-fillet-lap-joints and, in addition, must be joined to the tank shell by means of plug welds, having a minimum diameter of 1" (see Figure 20). The number of plug welds required for each interior compartment head shall not be less than that given in the following table:

Inside diameter of tanks:	Minimum number of plug welds
60 inches or under	16
Over 60 to 78 inches	20
Over 78 to 96 inches	24
Over 96 to 112 inches	28
Over 112 to 122 inches	32

AAR-6. Stress relieving. (p) Each tank must be stress relieved by heating uniformly to at least 1100 deg. Fahr. The tank shall be brought slowly up to the specified temperature and held at that temperature for a period of time proportioned on the basis of at least one hour per inch of maximum thickness, minimum one hour, and shall be allowed to cool slowly in a still atmosphere. Welded attachments must be welded in place before tank is stress relieved. Fusion welded anchors, if applied, must be welded in place before tank is stress relieved. The entire tank must be stress relieved by heating the complete tank as a unit.

AAR-6. Inspection. (q-1) Purchaser of tanks must provide for inspection by a competent inspector. The manufacturer shall submit the tank for inspection at such stages as may be designated by the inspector.

AAR-6. (q-2) Each tank must also be inspected at the time of the hydrostatic-pressure and hammer tests by the inspector.

AAR-6. (q-3) The manufacturer shall certify that the welding on the tank has been done only by welding operators who have passed the test requirements and that the same material and technique used in making the tests were employed in fabricating the tank.

AAR-6. Distortion. (r) The shell of the completed tank shall be circular within a limit of plus or minus one percent of the inside diameter of the tank.

AAR-6. Repairs during original construction. (s-1) Pinholes, cracks, or other defects in welded joints shall be repaired only by chipping, machining, or burning out the defect and rewelding. For gas welding the metal around the defects shall be preheated to a dull red for a distance of at least 4 in. all around. Any preheating means may be used, such as a flange fire, gas or oil burner, or a welding torch. The preheating shall be done slowly so the heat will get well back into the plate and expand it thoroughly. For metallic arc welding preheating or reheating is not required.

AAR-6. (s-2) Tanks shall be stress relieved after any welding repairs have been made.

AAR-6. (s-3) After repairs have been made the tank shall again be tested in the regular way, and if it passes the test the inspector shall accept it. If it does not pass the test the inspector can order supplementary repairs, or, if in his judgment the tank is not suitable for service, he may permanently reject it.

ICC-7. Stress relieving. (a) All welding of the tank shell and of attachments welded directly thereto must be stress relieved as a unit.

AAR-7. Stress relieving. (a) See paragraph AAR-6 (p).

ICC-8. Tank mounting. (a) The manner in which tank is supported on and securely attached to the car structure must be approved.

AAR-8. Anchorage. (a) See Section H. **AAR-8. (b)** Designs of anchorage employing other means of securement to tank than rivets, as described in Section H, may be used if approved.

AAR-8. (c) Anchor rivets, if used, may have their heads on the inside of the tank shell covered and protected from the lading by a liquid-tight housing of approved design. The lower portion of the housing must be fusion welded to, and stress-relieved with, the tank shell as a unit. After the rivets have been driven and calked, the top portion of the housing must be secured to the top of the lower portion by an approved method of welding, which welding need not be stress-relieved. A hole must be provided through tank shell, under each housing to permit making air pressure test. Each test hole must be tightly closed after completion of test with an approved plug.

ICC-9. Expansion dome. (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside of dome, of at least 2 percent of the total capacity of the tank and dome combined, except that when safety valve or safety vent is applied to side of dome, the effective capacity of dome must be measured from top of safety valve or safety vent opening in the side of dome to inside top of shell of tank.

ICC-9. (b) The opening in manhole ring must be at least 16 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches and not more than 30 inches in diameter.

ICC-9. (c) The dome head must be dished convex outward.

AAR-9. (a) The entire dome must be of pressed, forged, or cast steel; if of forged or cast steel, integral attachments permissible. The dome head if separate, must be of pressed, forged, or cast steel; if of forged or cast steel, integral attach-

ments permissible. Dome head, if of pressed steel, must be dished to a radius of not more than 10 feet.

ICC-10. Closures for manholes. (a) The manhole cover must be of approved type and designed to make it practically impossible to remove the cover while the interior of the tank is subjected to pressure.

ICC-10. (b) Manhole covers must be made of cast, forged or pressed steel, malleable iron or other malleable metals. Manhole rings, if riveted to dome of tank, must be made of cast, forged or pressed steel, malleable iron or other malleable metals. Manhole rings, if welded to dome of tank, must be made of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-10. (c) All covers not hinged to tank must be attached to outside of the dome head, by at least a $\frac{3}{8}$ -inch chain or its equivalent.

ICC-10. (d) All joints between manhole covers and their seats must be made tight against leakage of vapor and liquid by use of gaskets of suitable material.

AAR-10. (a) Bolted type, bolted and hinged type or other approved type must be used. See Figs. 5 and 6.

ICC-11. Gauging, bottom outlet valve operating, venting, loading and discharging, and air inlet devices extending through domes of tanks. (a) Not specification requirements. When installed, these devices, including their valves, must be protected from accidental injury by being set into a securely covered recess, or by means of a cast or pressed steel or malleable iron housing with cover securely attached. Housing, if welded to dome of tank, must be made of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of dome. Openings in wall of housing must be equipped with screw plugs or other closures. Drain holes permitted. Discharging (syphon) pipe must be securely anchored.

ICC-12. Venting, loading and discharging, and air inlet devices. (a) These devices, when installed, must be closed by efficient valves made of metal not subject to rapid deterioration by the lading. Provision must be made for closing the pipe connections of the valves.

ICC-13. Bottom discharge outlets. (a) The bottom discharge outlet, when installed, must be made of metal not subject to rapid deterioration by the lading, be of approved construction, and be provided with a valve at its upper end and a liquid-tight closure at its lower end.

ICC-13. (b) The valve operating mechanism and outlet nozzle construction must be such as to insure against unseating of valve due to stresses or shocks incident to transportation.

ICC-13. (c) Tanks used for the transportation of poisonous solids, when de-

signed for bottom unloading, must have the openings securely closed against leakage.

AAR-13. (a) Bottom discharge outlet nozzle may be cast, pressed or forged metal. If outlet nozzle is welded to tank, it must be of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of tank.

AAR-13. (b) To provide for the attachment of standard unloading connections, the bottom of the main portion of the outlet nozzle or some fixed attachment thereto, must have external U. S. F. threads four threads to the inch. The liquid-tight closure must have corresponding female threads machined to give proper clearance.

AAR-13. (c) For outlet nozzles that project 6 in. or more from shell of tank a "V" groove must be cut (not cast) in the upper part of outlet valve nozzle at a point immediately below lowest part of valve to a depth that will leave thickness of nozzle wall at the root of the "V" not over $\frac{3}{8}$ in. In the case of steam jacketed outlet nozzles this groove must be below the steam chamber but above the bottom of center sill construction. Where outlet nozzle is not a single piece, arrangement must be made to provide the equivalent of the breakage groove.

AAR-13. (d) The flange on the outlet nozzle must be of a thickness which will prevent distortion of the valve seat or valve by any change in contour of the shell resulting from expansion of lading, or other causes, and which will insure that accidental breakage of the outlet nozzle will occur at or below the "V" groove.

AAR-13. (e) The valve must have no wings or stem projecting below the "V" groove in the outlet nozzle, unless they are scored or designed to break or bend without unseating valve. The valve and seat must be readily accessible or removable for repairs, including grinding.

AAR-13. (f) The valve operating mechanism must have means for compensating for variation in the vertical diameter of the tank produced by expansion, weight of the liquid contents, or other causes, and should operate from the interior of the tank, but in the event the rod is carried through the dome leakage must be prevented by packing in stuffing box and cap nut.

AAR-13. (g) In no case must extreme projection of bottom discharge outlet equipment extend to within 12 in. above top of rail. All bottom discharge outlet reducers and closures and their attachments must be secured to car by at least $\frac{3}{8}$ in. chain or its equivalent, except that outlet closure plugs may be attached by $\frac{1}{4}$ in. chain. When the bottom discharge outlet closure is of the combination cap and valve type, the pipe con-

nection to the valve must be closed by a plug or cap.

ICC-14. *Safety valves.* (a) The tank must be equipped with one or more safety valves mounted on expansion dome. Total valve discharge capacity must be sufficient to prevent building up of pressure in the tank in excess of 45 pounds per square inch.

ICC-14. (b) One safety valve must be provided for each tank, or compartment thereof, of 6,650 gallons capacity or less, and two safety valves for each tank, or compartment thereof, of over 6,650 gallons capacity.

ICC-14. (c) Each safety valve must be set to open at a pressure of 25 pounds per square inch. (For tolerance see paragraph 18.)

ICC-14. (d) Tanks used for the transportation of corrosive liquids, inflammable solids, oxidizing materials, or poisonous liquids or solids, Class B, need not be equipped with safety valves, but if not so equipped must have one safety vent at least 2 inches inside diameter closed with a frangible disc of lead or other suitable material, of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within eight hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch, may be applied. All tanks equipped with vents must be stenciled "Not for Inflammable Liquids."

AAR-14. (a) Safety valve must be of approved design. See Fig. 2 and AAR Para. 18. For safety vent, closure of bolted type preferable, see Figure 3-A. For screw type safety vent closure, see Figure 3.

AAR-14. (b) Safety valve or safety vent flanges, if welded to dome, must be of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-15. *Fixtures, reinforcements, and attachments not otherwise specified.*

(a) All attachments to tank and dome must be applied by approved means. When attachments are riveted the edges of plates must be beveled so that the angle of the calking edge will be between 60 and 70 degrees with the flat surface of the attachment. The extreme calking edge distance, measured from center line of rivet hole, must be at least one and one-half times the diameter of the hole and not more than that distance plus $\frac{1}{4}$ inch. The joints formed by attachment of all riveted external projections must be calked on the inside. Split

calking prohibited. Heater systems when installed, must be so constructed that the breaking off of their external connections will not cause leakage of contents of tanks.

AAR-15. *Heater systems.* (a) See Section G.

AAR-15. (b) Heater system and plug flanges, if welded to tank or dome, must be of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of tank or dome.

ICC-16. *Plugs for openings.* (a) All plugs must be solid, of good grade cast iron or equivalent, with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs when inserted from the outside of tank heads must have the letter "S" at least $\frac{3}{8}$ inch in size stamped with steel stamp or cast on the outside surface to indicate the plug is solid. Plugs when inserted from the inside are identified by appearance of the plug on the outside of the tank as being solid—therefore, no mark required.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, before being put into service, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 60 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety valves or safety vents, must be in place while test is made.

ICC-17. (b) Calking of welded joints to stop leaks developed during the foregoing tests prohibited. Repairs in welded joints must be made as prescribed in paragraph 6 (a).

ICC-17. (c) *Test of interior heater systems.* Before interior heater systems are placed in service they must be tested with hydrostatic pressure and must be tight at 200 pounds per square inch.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 60 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of all butt welded joints and for the full length of all butt welded joints of the tank shell. The weight of the hammer in pounds shall approximately equal the thickness of the thinnest plate of the joint in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test this pressure must be held for at least 10 minutes.

AAR-17. *Anchor rivet housing test.* (b) After anchor rivet housings, if applied, are in place these housings must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

AAR-17. (c) Tanks if lagged, the test of tank must be made before lagging is applied.

ICC-18. *Tests of safety valves.* (a) Each valve must be tested, before being put into service, by attaching to an air line and applying pressure. The valve must not leak below 20 pounds pressure. (See Note Section 31 (k) of Freight Regulations). The valve must open at the pressure prescribed in paragraph 14 (c), with a tolerance of plus or minus 3 pounds.

AAR-18. (a) The above referred to note in Section 31 (k) of Freight Regulations reads in part as follows: "Safety valves now used on tank cars are reported to permit slow leakage of vapor and it appears that material changes in the design and construction of these valves are necessary to make them tight. . . the necessary changes must be made with the least possible delay."

ICC-19. *Retests of tanks, safety valves, and interior heater systems.* (a) Tanks, safety valves, and interior heater systems must be retested, as prescribed for original tests in paragraphs 17 and 18, at intervals of ten years or less after the original test. Tanks must also be retested before being returned to service after any repairs requiring welding, riveting or calking of rivets. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) For lagged tanks, if the jacket and lagging are not removed, the tanks must hold the prescribed pressure for at least 20 minutes. A drop in pressure shall be evidence of leakage, and such portion of the jacket and lagging must be removed as may be necessary to locate the leak and make repairs.

AAR-19. (b) Anchor rivet housing, if used, must not be removed during the test period. Anchor rivet housings must be retested to a pressure of 100 pounds per square inch, as prescribed in paragraph AAR-17 (b).

ICC-20. *Marking.* (a) Each tank must be marked, thus certifying that the tank complies with all the requirements of this specification. These marks must be as follows:

ICC-20. (b) ICC-103-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (c) Initials of tank builder and date of original test of tank in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped marks specified in paragraph 20 (b).

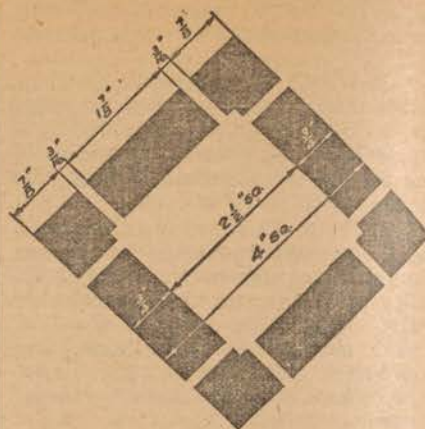
ICC-20. (d) Initials of company and date of additional tests performed by the party assembling the completed car, in those cases where the tank builder does not complete the fabrication of tank, such as application of riveted anchors, etc., in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal immediately below the stamped marks specified in paragraph 20 (c) by the party assembling the completed car. These marks must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high immediately below the stenciled mark specified in paragraph 20 (b) by the party assembling the completed car.

ICC-20. (e) Date on which the tank was last tested, pressure to which tested, place where test was made, and by whom, stenciled on the tank, or jacket if lagged.

ICC-20. (f) Date on which the safety valves were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the tank, or jacket if lagged.

ICC-20. (g) Date on which interior heater systems were last tested, pressure to which tested, place where test was made, and by whom, stenciled on the tank, or jacket if lagged.

ICC-20. (h) Identification mark, illustrated below, for approved manhole closure must be stenciled on each side of dome, or jacket if lagged, in line with the ladders and in a color contrasting to color of dome.



ICC-20. (i) When a tank car and its appurtenances are designed and authorized for the transportation of a particular commodity only, the name of that commodity followed by the word "only," or such other wording as may be required to indicate the limits of usage of the car, must be stenciled on each side of the tank, or jacket if lagged, in letters at least 2 inches high, immediately above the stenciled mark specified in paragraph 20 (b).

AAR-20. (a) For all other markings see Fig. 1.

ICC-21. *Reports.* (a) Before a tank car is placed in service, the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of welded repairs to, alterations of or additions to tanks or equipment therefor from original design and construction, all of which must be approved, there must be furnished to the same parties a report in detail of the welded repairs, alterations or additions made to each tank covered by a particular application, showing the initials and number of each tank involved. Reports of retests must be rendered to the Bureau of Explosives and car owner.

AAR-21. For form of Certificate of Construction see Section F.

AAR-22. *Car structure.* For Car Structure see Section H.

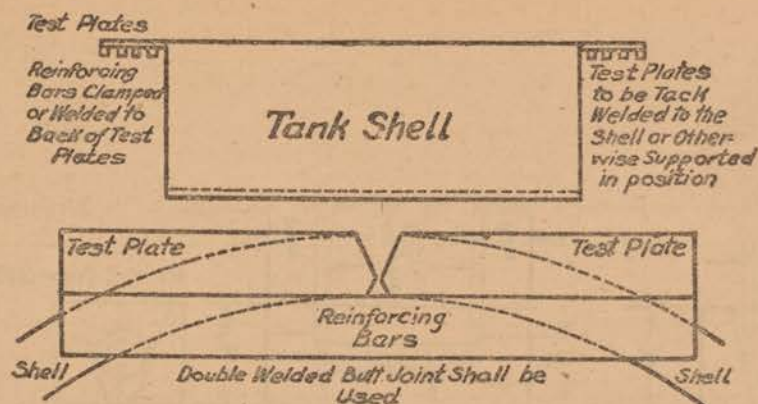


FIG. 9 METHOD OF FORMING LONGITUDINAL TEST PLATES

W = Approximately $\frac{1}{4}$ in. where t is Equal to or less than 1 in.
 W = Approximately 1 in. where t is Greater than 1 in.

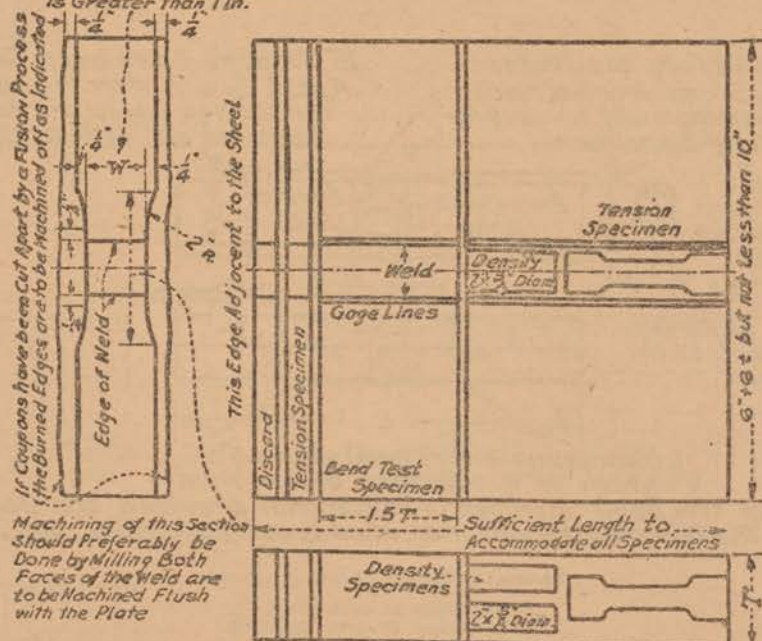


FIG. 10 TEST SPECIMENS FROM LONGITUDINAL WELDED TEST PLATES

T = THICKNESS OF TANK PLATE.
 t = THICKNESS OF TEST SPECIMEN.
 NOTE: WHERE T IS LESS THAN $\frac{5}{8}$ " THE DENSITY SPECIMENS ARE TO BE OF A DIAMETER = T

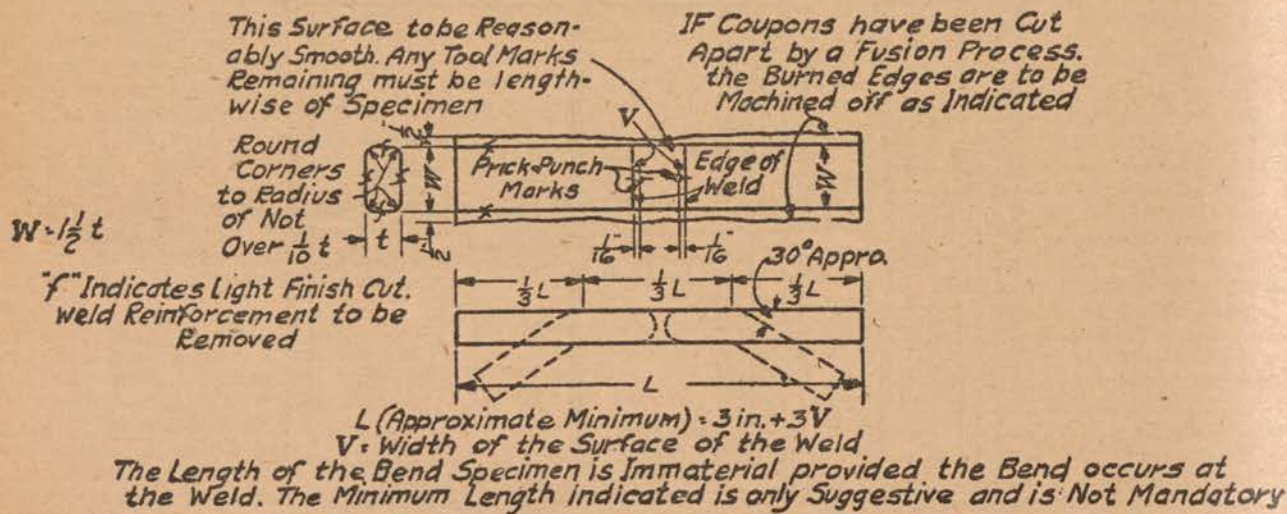
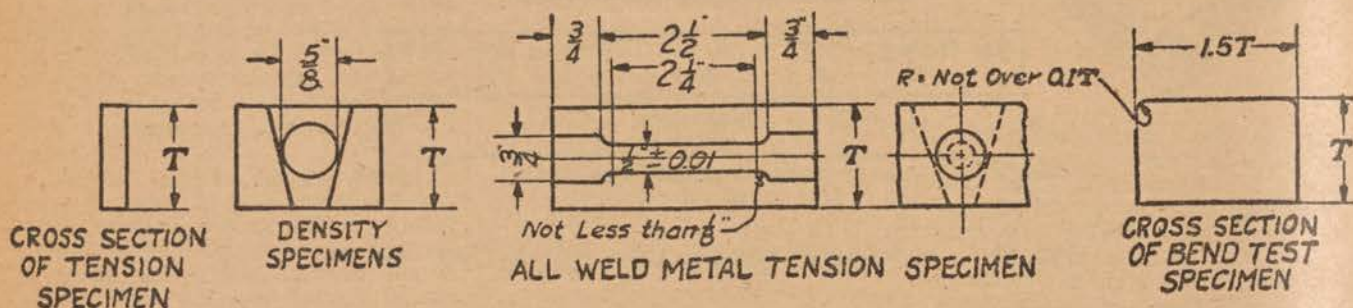


FIGURE 11.—Details of test specimens.

T=Thickness of tank plate.

t=Thickness of test specimen.

NOTE: Where T is less than 5/8" the density specimens are to be of a diameter=T.

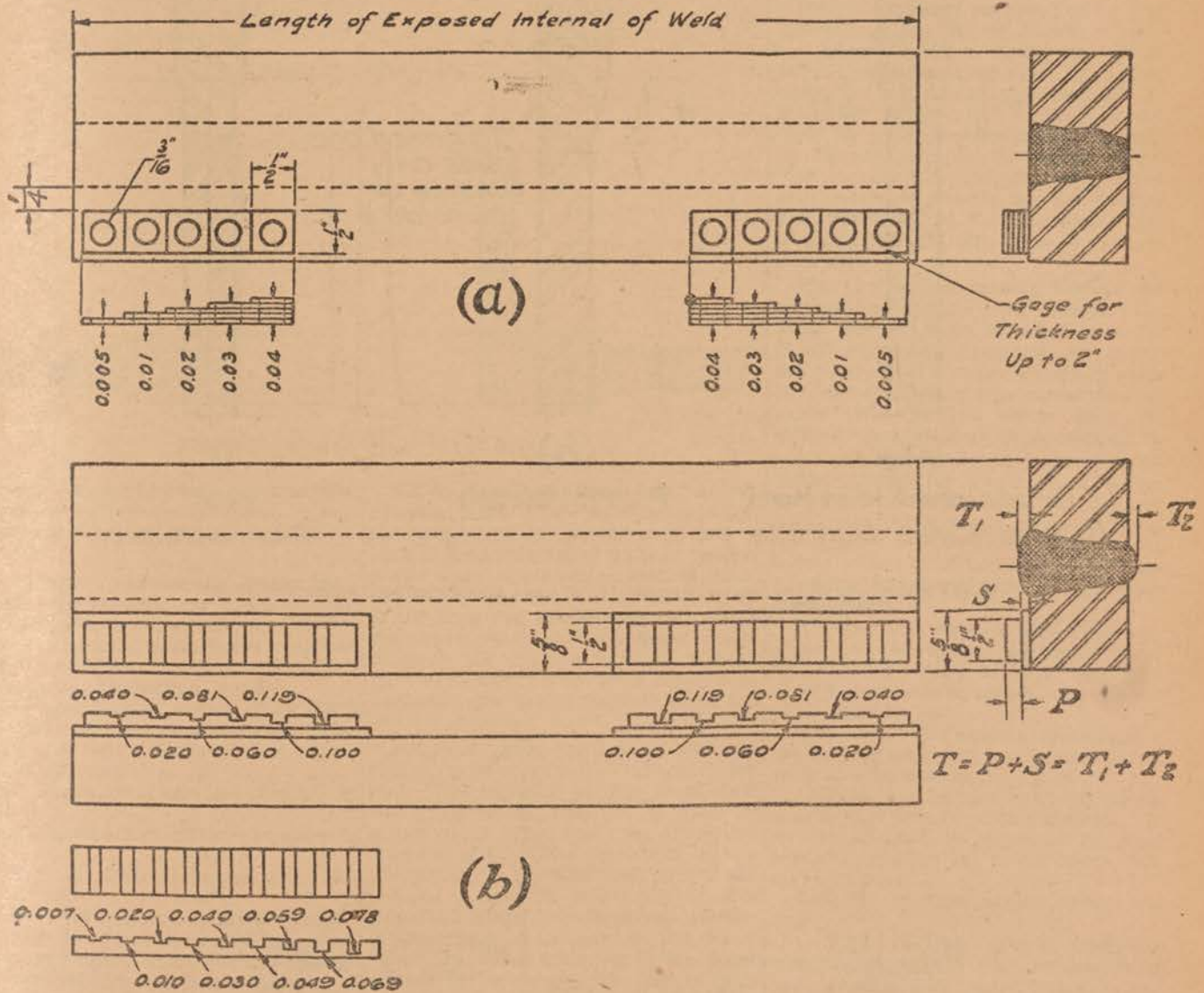


FIGURE 12.—Details of thickness gages of penetrameters.

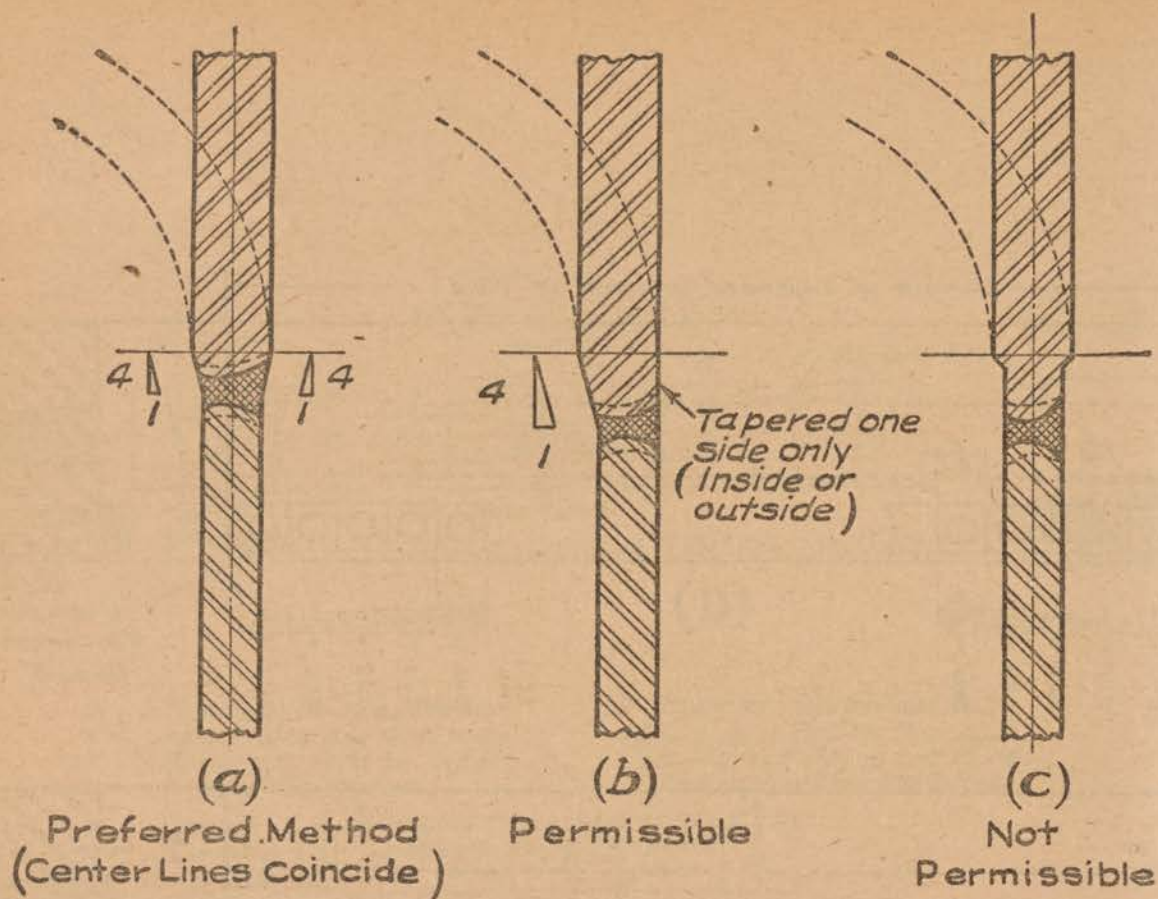


FIGURE 13.—Butt welding of plates of unequal thickness. Removal of reinforcement optional.
(See text.)

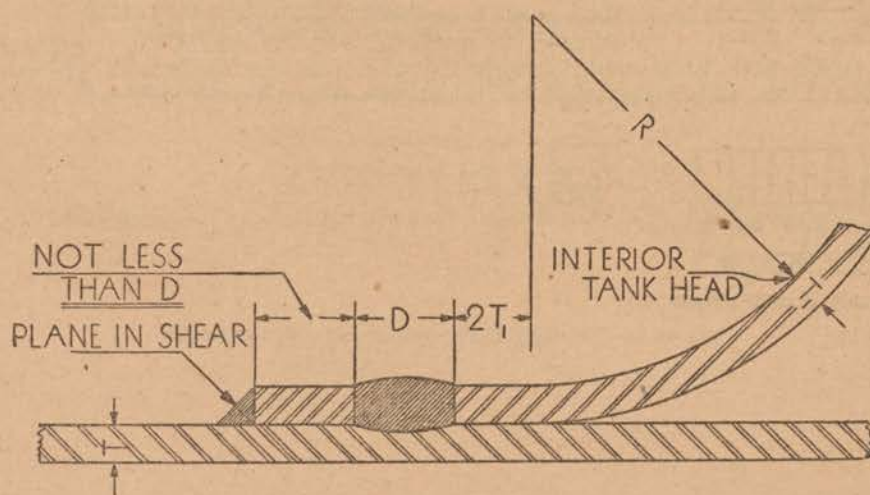


FIGURE 20.—Single full fillet lap joint with plug welds interior heads of compartment tank cars.

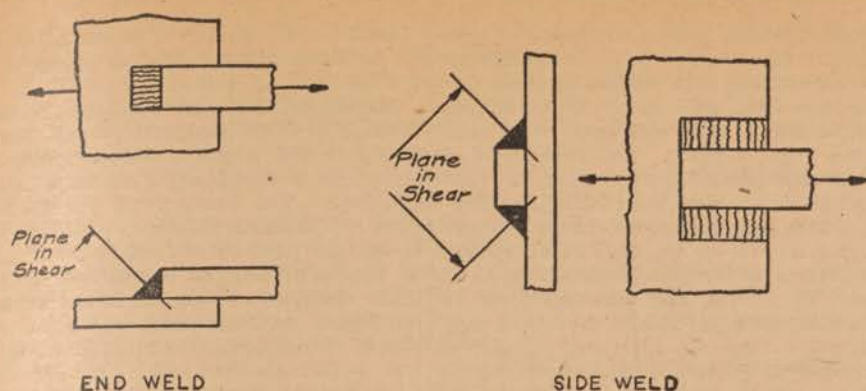


FIGURE 21.—Fillet welds.

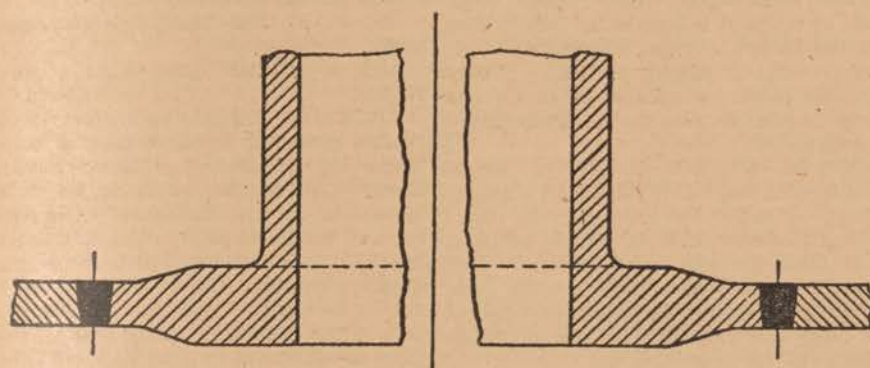


FIGURE 22.—Inserted type nozzle or dome.

SHIPPING CONTAINER SPECIFICATION
103A-W—FUSION-WELDED STEEL TANKS
TO BE MOUNTED ON OR TO FORM PART OF
A CAR

A. General requirements. Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers Class ICC-103A-W tank cars to which have been added AAR details which are not inconsistent therewith.

ICC Specification effective January 7, 1941.

AAR Specification effective January 7, 1941.

ICC-4. (d) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

ICC-6. (b) Manhole ring, safety vent flange, and bottom wash-out nozzle flange or other attachments may be riveted or fusion-welded. Riveted joints must be made metal-to-metal without interposition of other materials. Rivets, if used, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{8}$ inch nominal diameter prohibited. Fusion-welding for securing these attachments in place must be of the double-welded butt joint type of double-full-fillet-lap joint type.

ICC-9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside of dome, of at least 1 percent of the total capacity of the tank and dome combined, except that when safety vent is applied to side of dome, the effective capacity of dome must be measured from top of safety vent opening in the side of dome to inside top of shell of tank.

ICC-9. (b) The opening in manhole ring must be at least 16 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit welding of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit welding, the tank shell at this point must be adequately reinforced. When the tank shell is not cut out to permit welding and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required but the joint between the base of the dome and the tank shell must be sealed on the inside in an approved manner and dome-pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

ICC-9. (c) The dome head if of pressed steel must be dished convex

outward. The entire dome with attachments, or dome head and manhole ring with attachments, made of cast steel or other malleable metal may be used in place of dished steel plate dome head.

ICC-10. *Closures for manholes.* (a) the manhole cover must be of approved type and designed to provide a secure closure of the manhole.

ICC-10. (c) Requirements of this paragraph optional.

AAR-10. (a) This paragraph does not apply.

ICC-11. *Gauging, venting, loading and discharging, and air inlet devices extending through domes of tanks.* (a) These devices when installed must be tightly closed as prescribed in paragraph 12. Protective housing not required, except when the characteristics of the commodity for which the car is authorized are such that these devices must be equipped with valves to provide for the loading and unloading of the contents. Discharging (siphon) pipe must be securely anchored.

ICC-12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) These devices when installed must be tightly closed with approved caps, plugs, valves, or other fittings. Provision must be made for closing pipe connections of valves. The venting device must be equipped as prescribed in paragraph 14.

ICC-13. *Bottom discharge outlets.* (a) Bottom outlet for discharge of lading prohibited, but tank may be equipped with a bottom wash-out nozzle of metal not subject to rapid deterioration by the lading, which must be of approved construction complying with the following requirements:

ICC-13. (b) The construction and closure of the bottom wash-out nozzle must be such that it is liquid tight and should the nozzle be broken, loss of contents will not occur.

ICC-13. (c) The extreme projection of the bottom wash-out nozzle must be at least 12 inches above the top of rail.

AAR-13. (a) Bottom wash-out nozzle may be cast, pressed, or forged metal. If welded to tank, it must be of good weldable quality in conjunction with metal in tank.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) For bottom wash-out nozzles that project 6 in. or more from shell of tank a "V" groove must be cut (not cast) in the upper part of bottom wash-out nozzle at a point immediately below lowest part of inside closure seat to a depth that will leave thickness of nozzle wall at the root of the "V" not over $\frac{3}{8}$ in. Where bottom wash-out nozzle is not a single piece arrangement must be made to provide the equivalent of the breakage groove.

AAR-13. (d) The flange on the bottom wash-out nozzle must be of a thickness which will prevent distortion of the inside closure seat or closure casting by any change in contour of the shell, resulting

from expansion of lading, or other causes, and which will insure that accidental breakage of the wash-out nozzle will occur at or below the "V" groove.

AAR-13. (e) The closure casting must not project below the "V" groove in the wash-out nozzle. The closure casting and seat must be readily accessible for repairs, including grinding.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety vents.* (a) Safety valves prohibited, but a safety vent must be applied.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) This paragraph does not apply.

ICC-14. (d) Each tank or each compartment thereof must be equipped with one safety vent at least 2 inches inside diameter, closed with a frangible disc of lead or other suitable material of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within eight hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch, may be applied.

AAR-14. (a) Safety vent closure of bolted type preferable, see Figure 3-A. For screw type safety vent closure, see Figure 3.

AAR-14. (b) Safety vent flanges, if welded to dome, must be of cast, forged, or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-15. *Fixtures, reinforcements, and attachments not otherwise specified.* (a) All attachments to tank and dome must be applied by approved means. When attachments are riveted the edges of plates must be beveled so that the angle of the calking edge will be between 60 and 70 degrees with the flat surface of the attachment. The extreme calking edge distance, measured from center line of rivet hole, must be at least one and one-half times the diameter of the hole and not more than that distance plus $\frac{1}{4}$ inch. The joints formed by attachment of all riveted external projections must be calked on the inside. All rivet heads on the inside and outside of tank and dome must be calked. Split calking prohibited. Heater systems when installed, must be so constructed that the breaking off of their external connections will not cause leakage of contents of tanks.

ICC-18. (a) This paragraph does not apply.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks and interior heater systems.* (a) Tanks and interior

heater systems must be retested as prescribed for original tests in paragraph 17, except that acid may be used for filling the tank and dome when testing tanks which have not been in service more than 12 years. The first retest of tank and heater system must be conducted within four years after the original test, and subsequent retests at four-year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Tanks in service over 12 years must be internally inspected and heater systems inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tanks must also be retested before being returned to service after any repairs requiring welding, riveting or calking of rivets. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

ICC-20. (b) ICC-103A-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (f) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

SHIPPING CONTAINER SPECIFICATION 103B-W—RUBBER-LINED FUSION-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

A. *General requirements.* Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers Class ICC-103B-W tank cars to which have been added A. A. R. details which are not inconsistent therewith.

I. C. C. Specification effective January 7, 1941.

A. A. R. Specification effective January 7, 1941.

ICC-3. *Material.* (a) All plates for tank and expansion dome must be made of open-hearth boiler-plate steel of flange quality, the carbon content of which shall not exceed 0.30 percent. The lining must be acid-resisting rubber, vulcanized or bonded directly or otherwise attached to the metal tank, to provide a nonporous laminated lining. No rubber shall be under tension when applied except that due to conformation over rivet heads. Interior of tank must be free from scale, oxidation, moisture, and all foreign matter during the lining operation.

ICC-3. (d) This paragraph does not apply.

AAR-3. *Lining.* (b) See paragraphs ICC-3 and ICC-4 (b).

AAR-3. (d) Rubber-lined tanks must be stenciled as prescribed in paragraph ICC-20 (e).

ICC-4. (b) The rubber lining must be at least $\frac{3}{8}$ inch thick, except that over all rivets and seams formed by riveted attachments the lining must be double thickness. The lining must overlap at least $1\frac{1}{2}$ inches at all edges, which must be straight and be beveled to an angle of approximately 45 degrees. Directly under the dome, vulcanized to the lining on bottom of tank, must be applied a rubber reinforcement pad at least $4\frac{1}{2}$ feet square and at least $\frac{1}{2}$ inch thick, with edges of pad beveled to an angle of approximately 45 degrees. An opening in this pad for sump is permitted.

ICC-4. (d) This paragraph does not apply.

AAR-4. (c) Car must have under-frame.

ICC-6. (b) Manhole ring, safety vent flange, and sump flange or other attachments may be riveted or fusion-welded. Riveted joints must be made metal to metal without interposition of other material. Rivets, if used, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{3}{8}$ inch nominal diameter prohibited. Fusion-welding for securing these attachments in place must be of the double-welded butt joint type or double-full-illet-lap joint type. All rivet heads on inside of tank must be buttonhead or similar shape, of uniform size and the under surface of heads must be driven tight against shell. All plates, castings, and rivet heads on inside of tank must be calked. All projecting edges of plates, castings, and rivet heads on inside of tank must be rounded and free from fins or other irregular projections. Castings must be free from porosity.

ICC-9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 1 percent of the total capacity of the tank and dome combined, except that when safety vent is applied to side of dome, the effective capacity of dome must be measured from top of safety vent opening in the side of dome to inside top of shell of tank.

ICC-9. (b) The opening in manhole ring, before lining, must be at least 18 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit welding of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit welding, the tank shell at this point must

be adequately reinforced. When the tank shell is not cut out to permit welding and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required. Dome pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

ICC-9. (c) The dome head if of pressed steel must be dished convex outward. The entire dome with attachments, or dome head and manhole ring with attachments, made of cast steel or other malleable metal may be used in place of dished steel plate dome head.

ICC-10. *Closures for manholes.* (a) The manhole cover must be of approved type and designed to provide a secure closure of the manhole.

ICC-10. (b) Manhole cover may be made of any suitable metal. The top, bottom, and edge of manhole cover must be covered with rubber as prescribed in paragraphs 3 and 4. Through bolt holes may be lined with rubber at least $\frac{1}{8}$ inch in thickness. Cover made of metal not affected by lading need not be rubber covered. All rubber surfaces on outside of tank or fittings must be painted with an age-resisting paint to protect the rubber from light rays. Manhole rings, if riveted to dome of tank, must be of cast, forged or pressed steel, malleable iron or other malleable metals. Manhole rings, if welded to dome of tank, must be made of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-10. (c) Requirements of this paragraph optional.

AAR-10. (a) This paragraph does not apply.

ICC-11. *Gauging, venting, loading and discharging, and air inlet devices extending through domes of tanks.* (a) These devices when installed must be tightly closed in an approved manner. Protective housing not required, except when the characteristics of the commodity for which the car is authorized are such that these devices must be equipped with valves to provide for the loading and unloading of the contents. Discharging (syphon) pipe must be securely anchored.

ICC-12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) When installed, these devices and their closures must be of metal and have all surfaces covered with rubber as prescribed in paragraphs 3 and 4. These devices when made of metal not affected by the lading need not be rubber covered. Interior pipes of these devices must be supported at their lower end.

ICC-13. *Bottom discharge outlets.* (a) Bottom discharge outlets prohibited. Bottom sump of cast, pressed, or forged metal is permissible. If used and welded to tank, it must be of cast, pressed, or forged metal and be of good weldable quality in conjunction with metal of tank.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety vents.* (a) Safety valves prohibited, but a safety vent must be applied.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) This paragraph does not apply.

ICC-14. (d) Each tank, or each compartment thereof, must be equipped with one safety vent, lined with rubber of at least $\frac{1}{8}$ inch thickness, having an inside diameter of at least $1\frac{1}{4}$ inches after lining, closed with a frangible disc of lead or other suitable material of a thickness that will hold a pressure of 30 pounds per square inch for a period of at least one hour but will rupture within 8 hours. Means for holding disc in place must be such as to prevent distortion or damage to disc when applied. Safety vent closure must be chained or otherwise fastened to prevent misplacement. An additional sealed vent of approved design, to prevent use of unloading pressures in excess of 45 pounds per square inch, may be applied.

AAR-14. (a) Safety vent closure of bolted type preferable, see Figure 3-A. For screw type safety vent closure, see Figure 3.

AAR-14. (b) Safety vent flanges, if welded to dome, must be of cast, forged, or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-16. *Plugs for openings.* (a) All plugs must be solid, of good grade cast iron or equivalent, with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs must have all surfaces exposed to the lading covered with rubber or be made of metal not affected by lading.

ICC-17. *Tests and tanks.* (a) Each tank must be tested, before rubber lining is applied, by completely filling tank and dome with water, or other liquid having similar viscosity, of a temperature which must not exceed 100° F. during the test, and applying a pressure of 60 pounds per square inch. Tank must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. All rivets and closures, except safety vents, must be in place while test is made. After tank is rubber-lined, no further tests are required.

ICC-18. (a) This paragraph does not apply.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks and interior heater systems.* (a) Periodic retests of tanks are not required. Tanks must be retested before rubber lining is renewed. The first retest of heater systems must be conducted within four years after the original test, and subsequent retests at four-year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Heater systems in service over 12 years must be inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tanks must also be retested before being returned to service after any repairs requiring welding, riveting or calking of rivets. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

ICC-20. (b) ICC-103B-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (c) "Rubber-lined tank—pressure test not required," stenciled on tank, or jacket if lagged, instead of record of test of tank.

ICC-20. (f) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-21. (b) Before a tank car tank not originally built under this specification is lined with rubber, a report certifying that the tank and its equipment have been brought into compliance with the tank requirements of Specification 103B-W must be furnished by car owner to the party who is to apply the rubber lining. A copy of this report, together with report in approved form certifying that tank has been lined in compliance with all requirements of this specification, must be furnished by party lining the tank to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads.

SHIPPING CONTAINER SPECIFICATION 103C-W—FUSION-WELDED ALLOY STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

A. *General requirements.* Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraph (paragraph numbers refer to like numbers in specification 103-W):

This specification covers Class ICC-103C-W tank cars to which have been added AAR details which are not inconsistent therewith.

ICC Specification effective January 7, 1941.

AAR Specification effective January 7, 1941.

ICC-3. *Material.* (a) All plates, and rivets if used, and all projections and their closures, must be made of a metal capable of resisting the action of nitric acid as follows:

The maximum corrosion rate in inches penetration per month in the standard 65% boiling nitric acid test shall be 0.006 for the straight chromium-bearing stainless steel containing 15 to 18% chromium and 0.0015 for any of the chromium nickel alloys of the 18% chromium 8% nickel type and modified chromium nickel type, this figure to be an average of five 48-hour periods.

ICC-3. (b) This paragraph does not apply.

ICC-3. (c) This paragraph does not apply.

ICC-3. (d) This paragraph does not apply.

AAR-3. (a) All plates, forgings, tubes, valve castings and rivets must be in accordance with AAR Specifications for materials meeting requirements of paragraph ICC-3 (a).

AAR-3. (c) This paragraph does not apply.

ICC-4. (b) This paragraph does not apply.

ICC-4. (d) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

ICC-6. (b) Manhole ring, safety valve flange, and sump flange or other attachments may be riveted or fusion welded. Riveted joints must be made metal to metal without interposition of any other material. Rivets, if used, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{16}$ inch nominal diameter prohibited. Fusion-welding for securing these attachments in place must be of the double-welded butt joint type or double-full-fillet-lap joint type.

AAR-6. *Test plates.* (d-1) Two sets of test plates of the dimensions shown in Fig. 16 from steel of the same specifications and thickness as the shell plates, prepared for welding, may be attached to the shell plate being welded, as in Fig. 9, one set on each end of one longitudinal joint of each tank so that the edges to be welded in the test plates are a continuation of and duplication of the corresponding edges of the longitudinal joint. In this case the weld metal shall be deposited in the test plates continuously with the weld metal deposited in the longitudinal joint. As an alternate method, detached test plates may be welded as provided for in AAR-6 (d-2). The plates for test samples may be taken from any part of one or more plates of the same lot of material that is used in the fabrica-

tion of the welded tanks and without reference to the direction of the mill rolling. When more than one welding operator is employed on a car tank, the required test plates for the individual tank shall be made by the welding operator designated by the inspector.

AAR-6. (d-4) Where the welding has warped the test plates they shall be straightened before being annealed. The test plates shall be subjected to the same annealing operation as required by AAR-6 (p). At no time shall the test plates be heated to a temperature higher than that used for annealing the tank.

AAR-6. *Test specimens.* (e) The inspector shall select one of the two welded test plates from which the coupons for tension, corrosion, and bend tests and for specific-gravity determinations shall be removed as shown in Fig. 16 and be of the dimensions shown in Figs. 11 and 16.

AAR-6. (f-2) The tensile strength of the joint specimen in Fig. 16 shall not be less than the minimum of the specified tensile range of the plate used. (The tension test of the joint specimen as specified herein is intended as a test of the welded joint and not of the plate).

AAR-6. (f-3) The tension-test specimen of the weld metal shall be taken entirely from the deposited weld metal and shall meet the following requirements:

Tensile strength—at least that of the minimum of the range of the plate which is welded:

Elongation, minimum=15 percent in 2 inches.

For plate thicknesses less than $\frac{5}{16}$ inch, the all-weld-metal tension test may be omitted.

AAR-6. *Specific gravity of weld metal.* (h) Specimens shall be taken from the weld metal of the joints. The specific-gravity specimens shall, if possible, be 2 inches long and $\frac{3}{8}$ inch in diameter, as shown in Fig. 16. The minimum specific gravity shall be not less than 99.0% of the alloy plate used.

AAR-6. (i-5) Should the specific gravity obtained on the specific-gravity specimen be less than 98.5%, no retest shall be allowed. Should the specific gravity lie between 98.5% and 99.0%, a retest shall be allowed on specimen cut from the second test plate. The retest shall show a specific gravity of not less than 99.0% of the alloy plate used.

AAR-6. *Preparation for welding.* (l-1) The plates may be cut to size and shape by machining or shearing. The plates or sheets to be joined shall be accurately cut to size and formed. In all cases the forming shall be done by pressure and not by blows, including the edges of the plates forming longitudinal joints of tanks.

AAR-6. (l-9) For double-welded butt joints the reverse sides shall be chipped or ground, so as to secure a clean surface of the originally deposited weld prior to the application of the first bead of welding on the second side. Such chipping or grinding shall be done in a manner that will insure proper fusion of the weld

metal. These requirements are not intended to apply to any process of welding by which proper fusion and penetration are otherwise obtained and no impurities remain at the base of the weld.

AAR-6. *Heat treatment.* (p) Tank must be heat treated after all welding is completed to remove stresses and at the proper temperature to obtain the corrosion resistance specified in Paragraph ICC-3 (a). Such heat treatment shall be in accordance with the current AAR Specifications. Test plates must be heat treated with and at the same time as the tank.

AAR-6. *Repairs during original construction.* (s-1) Pinholes, cracks, or other defects in welded joints shall be repaired only by chipping or machining the defect and rewelding.

AAR-6. (s-2) Tanks shall be heat treated, per paragraph AAR-6 (p), after any welding repairs have been made.

ICC-7. *Heat treatment.* (a) All welding of the tank shell and of attachments welded directly thereto must be heat treated as a unit.

AAR-7. *Heat treatment.* (a) See paragraph AAR-6 (p).

ICC-9. *Expansion dome.* (a) The expansion dome must have a capacity, measured from the inside top of shell of tank to the inside top of dome or bottom of any vent pipe projecting inside dome, of at least 1 percent of the total capacity of the tank and dome combined.

ICC-9. (b) The opening in manhole ring must be at least 18 inches in diameter. The opening in the tank shell within the dome must be at least 29 inches, in diameter, and when the inside diameter of the dome exceeds 29 inches, the opening in the tank shell may be cut out to a diameter sufficiently greater than that of the dome to permit welding of tank shell to the base of the dome. When the inside diameter of the dome exceeds 30 inches and the shell of tank is cut out as provided to permit welding, the tank shell at this point must be adequately reinforced. When the tank shell is not cut out to permit welding and the opening in tank shell does not exceed 30 inches in diameter, no reinforcement is required but the joint between the base of the dome and the tank shell must be sealed on the inside in an approved manner and dome pocket drain holes must be provided with nipples projecting inside the tank at least one inch.

ICC-9 (c) A dome head and manhole ring in one piece may be used instead of a dished plate dome head.

ICC-10. *Closures for manhole.* (a) The manhole cover must be of approved type and designed to provide a secure closure of the manhole.

ICC-10. (b) Manhole rings and covers must be made of the metal prescribed in paragraph ICC-3.

ICC-10. (c) Requirements of this paragraph optional.

AAR-10 (a) This paragraph does not apply.

ICC-11. *Gauging, venting, loading and discharging, and air inlet devices extending through domes of tanks.* (a) These devices when installed must be tightly closed as prescribed in paragraph 12 and be of approved design. Protective housing of approved design covering all these devices must be installed. Discharging (siphon) pipe must be securely anchored.

ICC-12. *Gauging, venting, loading and discharging, and air inlet devices.* (a) These devices when installed must be tightly closed with approved caps, plugs, valves, or other suitable fittings. Provision must be made for closing pipe connections of valves.

ICC-13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited for cars to be used for transportation of corrosive liquids. Bottom sump of cast, pressed, or forged metal is permissible. If used and welded to tank, it must be of cast, pressed, or forged metal and be of good weldable quality in conjunction with metal of tank.

ICC-13. (b) This paragraph does not apply for cars transporting corrosive liquids.

ICC-13. (c) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (a) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (b) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (c) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (d) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (e) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (f) This paragraph does not apply for cars transporting corrosive liquids.

AAR-13. (g) This paragraph does not apply for cars transporting corrosive liquids.

ICC-14. *Safety valves.* (a) The tank must be equipped with a safety valve at least 2 inches inside diameter mounted on top of expansion dome.

ICC-14. (b) One safety valve must be provided for each tank or compartment thereof.

ICC-14. (c) The safety valve must be set to open at a pressure of 45 pounds per square inch. (For tolerance see paragraph ICC-18.)

ICC-14. (d) This paragraph does not apply.

AAR-14. (a) Safety valve must be of approved design.

AAR-14. (b) Safety valve flanges, if welded to dome, must be of cast, forged or pressed metal and be of good weldable quality in conjunction with metal of dome.

ICC-15. *Fixtures, reinforcements, and attachments not otherwise specified.*

(a) All attachments to tank and dome must be applied by approved means. When attachments are riveted the edges of plates must be beveled so that the angle of the calking edge will be between 60 and 70 degrees with the flat surface of the attachment. The extreme calking edge distance, measured from center line of rivet hole, must be at least one and one-half times the diameter of the hole and not more than that distance plus $\frac{1}{4}$ inch. The joints formed by attachment of all riveted external projections must be calked on the inside. All rivet heads on the inside and outside of tank and dome must be calked. Split calking prohibited. Heater systems, when installed, must be so constructed that the breaking off of their external connections will not cause leakage of contents of tanks.

ICC-16. *Plugs for openings.* (a) All plugs must be solid, made of materials prescribed in paragraph 3, with standard pipe thread, and when in contact with lading must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs when inserted from the outside of tank heads must have the letter "S" at least $\frac{3}{8}$ inch

in size stamped with steel stamp or case on the outside surface to indicate the plug is solid. Plugs when inserted from the inside are identified by appearance of the plug on the outside of the tank as being solid—therefore, no mark required.

ICC-18. *Tests of safety valves.* (a) Valve must be tested before being put into service, by attaching to an air line and applying pressure. The valve must open at the pressure prescribed in paragraph 14 (c), with a tolerance of minus 3 pounds.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks, safety valves, and interior heater systems.* (a) Tanks, safety valves, and interior heater systems must be retested as prescribed for original tests in paragraphs 17 and 18, except that acid may be used for filling tank and dome when testing tanks which have not been in service more than 12 years. The first retest must be conducted within four years after the original test, and subsequent retests at four-year intervals up to 12 years of service, thereafter at two-year intervals up to 20 years of service, and annually after 20 years of service. Tanks in service over 12 years must be internally inspected and heater systems inspected for defects which would make leakage or failure probable during transit and must be tested with water only. Tank must also be retested before being returned to service after any repairs requiring welding, riveting, or calking of rivets. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

ICC-20. (b) ICC-103C-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the tank, or jacket if lagged, in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (h) This paragraph does not apply.

original tests. Tanks must also be re-tested before being returned to service after any repairs requiring welding, riveting, or calking of rivets. If the jacket and lagging are not removed, the tank must hold the prescribed pressure for at least 20 minutes. A drop in pressure shall be evidence of leakage, and such portion of the jacket and lagging must be removed as may be necessary to locate the leak and make repairs. After the repairs have been made, the tank must again be subjected to the prescribed test. Heater systems must be retested after repairs. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

ICC-20. (b) ICC-104-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stencilled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

SHIPPING CONTAINER SPECIFICATION 104A-W—LAGGED FUSION-WELDED STEEL TANKS TO BE MOUNTED OR TO FORM PART OF A CAR

A. General requirements. Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers class ICC-104A-W tank cars to which have been added A. A. R. details which are not inconsistent therewith.

I. C. C. Specification effective January 7, 1941.

A. A. R. Specification effective January 7, 1941.

ICC-1. Type. (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and provide for the proper mounting of venting, loading, unloading, sampling, and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

ICC-1. (b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. T. U. per square foot, per degree Fahrenheit differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weather tight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell.

AAR-1. (a) See paragraphs ICC-1 (b). ICC-2. Bursting pressure. (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint must be at least 495 pounds per square inch.

ICC-4. Thickness and width of plates. (a) The minimum thickness of plates must be as follows:

Inside diameter of tanks	Bottom sheets, inch	Shell sheets, inch	Tank heads, inch
87 inches or under	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Over 87 to 96 inches	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{9}{16}$

ICC-4. (d) This paragraph does not apply.

AAR-4. (b) This paragraph does not apply.

AAR-4. (c) Car must have under-frame.

AAR-5. (a) The tank head shape shall be an ellipsoid of revolution in which the major axis shall equal the diameter of the shell and the minor axis shall be one-half of this.

ICC-6. (b) Manhole nozzle must be of approved design and attached to tank by riveting or fusion-welding. Riveted joints must be made metal to metal without interposition of other material. Rivets, if used, must be driven hot and calked inside. For computing rivet area the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{16}$ inch nominal diameter prohibited. Fusion-welding for securing attachments in place must be of the double-welded butt joint type or double-full-fillet lap joint type.

ICC-9. Expansion dome. (a) Expansion dome prohibited.

ICC-9. (b) This paragraph does not apply.

ICC-9. (c) This paragraph does not apply.

AAR-9. (a) This paragraph does not apply.

ICC-10. Manhole nozzle, cover and protective housing. (a) Manhole nozzle must be of cast, forged, or pressed steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

ICC-10. (b) Manhole cover must be of forged or rolled steel at least $2\frac{1}{4}$ inches thick, machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

ICC-10. (c) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

ICC-10. (d) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other

appurtenances mounted thereon, must be made tight against vapor pressure.

ICC-10. (e) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with approved riveted pin or rod with nuts and cotter pins. Openings in wall of housing must be equipped with screw plugs or other closures.

AAR-10. Manhole cover. (a) For recommended dimensions and tolerances of manhole cover see figure 7.

ICC-11. Venting, loading and discharging, gauging and sampling devices. (a) These devices must be approved type, made of metal not subject to rapid deterioration by the lading, and must withstand a pressure of 100 pounds per square inch without leakage. The venting, and loading and discharging valves must be directly bolted to seatings on manhole cover. Pipe connections of valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement. Thermometer well and sampling valve must be installed and closed with screw plugs or valves.

ICC-11. (b) The interior pipes of the liquid and gas discharge valves must be equipped with check valves.

ICC-11. (c) Gauging device, sampling valve, check valves, and thermometer well are not specification requirements on tanks used for the transportation of commodities other than those classed as liquefied compressed gases.

ICC-12. (a) This paragraph does not apply.

ICC-13. Bottom discharge outlets. (a) Bottom discharge outlet prohibited.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. Safety valves. (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover.

The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 75 pounds per square inch.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) The safety valves must be set to open at a pressure of not exceeding 75 pounds per square inch. (For tolerance see paragraph ICC-18.)

ICC-14. (d) This paragraph does not apply.

AAR-14. (a) Safety valve must be of approved design. See Appendix "A" for formula for calculating discharge capacity of valve and method of testing sample valve of a particular design to determine its actual discharge capacity which must at least equal the capacity calculated as necessary to prevent building up pressure in the tank in excess of 75 pounds per square inch.

AAR-14. (b) This paragraph does not apply.

ICC-15. *Fixtures, reinforcements, and attachments, not otherwise specified.*

(a) Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

AAR-15. (b) This paragraph does not apply.

ICC-16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not subject to rapid deterioration by the lading.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before the tank lagging is applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 100 pounds per square inch. The tank must hold the prescribed pressure for at least 10 minutes without leakage or distress. All rivets and closures, except safety valves, must be in place while test is made.

ICC-17. (c) Tests of exterior heater systems not a specification requirement.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 100 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of the welded joint and for the full length of all welded joints. The weight of the hammer in pounds shall approximately equal the thickness of the shell in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test this pressure must be held for at least 10 minutes.

AAR-17. (c) See paragraph ICC-17 (a).

ICC-18. *Tests of safety valves.* (a) Each valve must be tested by air or gas

before being put into service. The valve must open at a pressure not exceeding 75 pounds per square inch and be vaportight at 60 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks and safety valves.* (a) Tanks must be retested at intervals of 5 years or less to a pressure as prescribed in paragraph 17 (a), except that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; and safety valves must be retested to a pressure as prescribed in paragraphs 14 (c) and 18. Tanks must be retested before being returned to service after any repairs requiring welding, riveting or calking of rivets. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

ICC-20. (b) ICC-104A-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal bar near the center of both outside heads of the tank by the tank builder. This mark must also be stencilled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (g) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-20. (j) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraphs 20 (c) and (d). This mark must also be stencilled on the jacket immediately below the dome platform and directly behind the ladder, or ladders, if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of Tank
000,000 pounds.

SHIPPING CONTAINER SPECIFICATION 105A-300-W—LAGGED FUSION-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

A. *General requirements.* Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers Class ICC 105A300-W tank cars to which have been added AAR details which are not inconsistent therewith.

ICC Specification effective January 7, 1941.

AAR Specification effective January 7, 1941.

ICC-1. *Types.* (a) Tanks built under this specification must be cylindrical with

heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

ICC-1. (b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. t. u. per sq. ft., per degree Fahr. differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell.

AAR-1. (a) See paragraph ICC-1 (b).

ICC-2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint, must be at least 750 pounds per square inch.

ICC-2. (b) Opening in tank for manhole nozzle must be reinforced in an approved manner.

ICC-2. (c) Tank heads must be at least as thick at all points as wall of tank.

ICC-4. *Thickness and width of plates.* (a) The minimum thickness of plates $\frac{1}{8}$ ".

ICC-4. (d) This paragraph does not apply.

AAR-4. (b) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

AAR-5. (a) The tank head shape shall be an ellipsoid of revolution in which the major axis shall equal the diameter of the shell and the minor axis shall be one-half of this.

ICC-6. (b) Rivets, if used for attaching anchor, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{8}$ " nominal diameter prohibited.

Anchor rivets must be protected on the inside of tank by an approved design of housing.

ICC-6. (c) This paragraph does not apply.

AAR-8. (c) Anchor rivets, if used, must have their heads on the inside of the tank shell covered and protected from the lading by a liquid-tight housing of approved design. The lower portion of the housing must be fusion-welded to, and stress relieved with, the tank shell as a unit. After the rivets have been driven and calked, the top portion of the housing must be secured to the top of

the lower portion by an approved method of welding, which welding need not be stress relieved. A hole must be provided through tank shell, under each housing to permit making air pressure test. Each test hole must be tightly closed after completion of test with an approved plug.

ICC-9. *Expansion dome.* (a) Expansion dome prohibited.

ICC-9. (b) This paragraph does not apply.

ICC-9. (c) This paragraph does not apply.

AAR-9. (a) This paragraph does not apply.

ICC-10. *Manhole nozzle, cover and protective housing.* (a) Manhole nozzle must be of forged or rolled steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

ICC-10. (b) Manhole cover must be of forged or rolled steel at least 2 1/4 inches thick machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

ICC-10. (c) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

ICC-10. (d) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other appurtenances mounted thereon, must be made tight against vapor pressure.

ICC-10. (e) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with an approved riveted pin or rod with nuts and cotters. Openings in wall of housing must be equipped with screw plugs or other closures.

AAR-10. *Manhole cover.* (a) For recommended dimensions and tolerances of manhole cover see Figure 8.

ICC-11. *Venting, loading and discharging, sampling valves, gauging device, and thermometer well.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 300 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

ICC-11. (b) The interior pipes of the liquid and gas discharge valves, except as prescribed in paragraphs 11 (d) and 11

(e), may be equipped with check valves of an approved design.

ICC-11. (c) *Gauging Device, Sampling Valve, and Thermometer Well* are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 300 pounds per square inch without leakage. Interior pipes of the gauging device and sampling valves must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

ICC-11. (d) Tanks for use in the transportation of liquefied hydrocarbon and liquefied petroleum gases must have the interior pipes of the liquid and gas discharge valves equipped with check valves of an approved design.

ICC-12. (a) This paragraph does not apply.

ICC-13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve-discharge capacity must be sufficient to prevent building up a pressure in tank in excess of 225 pounds per square inch.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) The safety valves must be set to open at a pressure of not exceeding 225 pounds per square inch. (For tolerance see paragraph 18.)

ICC-14. (d) This paragraph does not apply.

AAR-14. (a) Safety valve must be of approved design. See appendix "A" for formula for calculating discharge capacity of valve and method of testing sample valve of a particular design to determine its actual discharge capacity which must at least equal the capacity calculated as necessary to prevent building up pressure in the tank in excess of 225 pounds per square inch.

AAR-14. (b) This paragraph does not apply.

ICC-15. *Fixtures, reinforcements, and attachments, not otherwise specified.*

(a) Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

AAR-15. (b) This paragraph does not apply.

ICC-16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not subject to rapid deterioration by the lading.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor-rivet housings and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 300 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

ICC-17. (c) Tests of exterior heater systems not a specification requirement.

ICC-17. (d) After anchor-rivet housings are in place these housings must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 225 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of the welded joint and for the full length of all welded joints. The weight of the hammer in pounds shall approximately equal the thickness of the shell in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test, each tank must be tested as prescribed in paragraph ICC-17 (a).

AAR-17. (b) See paragraph ICC-17 (d).

AAR-17. (c) See paragraph ICC-17 (a).

ICC-18. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 225 pounds per square inch and be vapor-tight at 180 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks, anchor-rivet housings, and safety valves.* (a) Tanks must be retested at intervals of 5 years or less to a pressure as prescribed in paragraph 17 (a), except that the anchor-rivet housings must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period,

indicating leakage; anchor-rivet housings must be retested to a pressure as prescribed in paragraph 17 (d); and safety valves must be retested to a pressure as prescribed in paragraphs 14 (c) and 18. Tanks must be retested before being returned to service after any repairs requiring welding. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

AAR-19. (b) See paragraph ICC-19 (a).

ICC-20. (a) ICC-105A300-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stencilled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (g) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-20. (j) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraph 20 (c) and (d). This mark must also be stencilled on the jacket immediately below the dome platform and directly behind the ladder, or ladders, if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of Tank
000,000 pounds.

SHIPPING CONTAINER SPECIFICATION 105A-400-W—LAGGED FUSION-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

A. General requirements. Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers class ICC-105A400-W tank cars to which have been added A. A. R. details which are not inconsistent therewith.

I. C. C. Specification effective January 7, 1941.

A. A. R. Specification effective January 7, 1941.

ICC-1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

ICC-1. (b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. t. u. per square foot, per degree Fahrenheit differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weather tight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell.

AAR-1. (a) See paragraph ICC-1 (b).

ICC-2. *Bursting pressure.* (a) The calculated bursting pressure based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint, must be at least 1,000 pounds per square inch.

ICC-2. (b) Opening in tank for manhole nozzle must be reinforced in an approved manner.

ICC-2. (c) Tank heads must be at least as thick at all points as wall of tank.

ICC-4. *Thickness and width of plates.* (a) The minimum thickness of plates $\frac{1}{16}$ ".

ICC-4. (d) This paragraph does not apply.

AAR-4. (b) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

AAR-5. (a) The tank head shape shall be an ellipsoid of revolution in which the major axis shall equal the diameter of the shell and the minor axis shall be one-half of this.

ICC-6. (b) Rivets, if used for attaching anchor, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{8}$ inch nominal diameter prohibited.

Anchor rivets must be protected on the inside of tank by approved design of housing.

ICC-6. (c) This paragraph does not apply.

AAR-8. (c) Anchor rivets, if used, must have their heads on the inside of the tank shell covered and protected from the lading by a liquid-tight housing of approved design. The lower portion of the housing must be fusion welded to, and stress-relieved with, the tank shell as a unit. After the rivets have been driven and calked, the top portion of the housing must be secured to the top of the lower portion by an approved method of welding, which welding need not be stress-relieved. A hole must be provided through tank shell, under each housing to permit making air-pressure test. Each test hole must be tightly closed after completion of test with an approved plug.

ICC-9. *Expansion dome.* (a) Expansion dome prohibited.

ICC-9. (b) This paragraph does not apply.

ICC-9. (c) This paragraph does not apply.

AAR-9. (a) This paragraph does not apply.

ICC-10. *Manhole nozzle, cover, and protective housing.* (a) Manhole nozzle must be of forged or rolled steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

ICC-10. (b) Manhole cover must be of forged or rolled steel at least $2\frac{1}{4}$ inches thick machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

ICC-10. (c) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

ICC-10. (d) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other appurtenances mounted thereon, must be made tight against vapor pressure.

ICC-10. (e) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with an approved riveted pin or rod with nuts and cotters. Openings in wall of housing must be equipped with screw plugs or other closures.

AAR-10. *Manhole cover.* (a) For recommended dimensions and tolerances of manhole cover see figure 8.

ICC-11. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 400 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

ICC-11. (b) The interior pipes of the liquid and gas discharge valves, except as prescribed in paragraphs 11 (d) and 11 (e), may be equipped with check valves of an approved design.

ICC-11. (c) Gauging Device, Sampling Valve, and Thermometer Well are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 400 pounds per square inch without leakage. Interior pipes of the gauging device and sampling valves must be

equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

ICC-11. (d) Tanks for use in the transportation of liquefied hydrocarbon and liquefied petroleum gases must have the interior pipes of the liquid and gas discharge valves equipped with check valves of an approved design.

ICC-12. (a) This paragraph does not apply.

ICC-13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 300 pounds per square inch.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) The safety valves must be set to open at a pressure of not exceeding 300 pounds per square inch. (For tolerance see paragraph 18.)

ICC-14. (d) This paragraph does not apply.

AAR-14. (a) Safety valve must be of approved design. See Appendix "A" for formula for calculating discharge capacity of valve and method of testing sample valve of a particular design to determine its actual discharge capacity which must at least equal the capacity calculated as necessary to prevent building up pressure in the tank in excess of 300 pounds per square inch.

AAR-14. (b) This paragraph does not apply.

ICC-15. *Fixtures, reinforcements, and attachments, not otherwise specified.* (a) Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

AAR-15. (b) This paragraph does not apply.

ICC-16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not

subject to rapid deterioration by the lading.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 400 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

ICC-17. (c) Tests of exterior heater systems not a specification requirement.

ICC-17. (d) After anchor rivet housings are in place these housings must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 300 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of the welded joint and for the full length of all welded joints. The weight of the hammer in pounds shall approximately equal the thickness of the shell in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test, each tank must be tested as prescribed in paragraph ICC-17 (a).

AAR-17. (b) See paragraph ICC-17 (d).

AAR-17. (c) See paragraph ICC-17 (a).

ICC-18. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 300 pounds per square inch and be vapor-tight at 240 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks, anchor rivet housings, and safety valves.* (a) Tanks must be retested at intervals of 5 years or less to a pressure as prescribed in paragraph 17 (a), except that the anchor rivet housings must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet housings must be retested to a pressure as prescribed in paragraph 17 (d); and safety valves must be retested to a pressure as prescribed in paragraphs 14 (c) and 18. Tanks must be retested before being returned to service after any repairs requiring welding. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

AAR-19 (b) See paragraph ICC-19 (a).
ICC-20. (b) ICC-105A400-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (g) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-20. (j) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraph 20 (c) and (d). This mark must also be stenciled on the jacket immediately below the dome platform and directly behind the ladder, or ladders, if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of Tank
000,000 pounds

SHIPPING CONTAINER SPECIFICATION
105A500-W—LAGGED FUSION-WELDED
STEEL TANKS TO BE MOUNTED ON OR TO
FORM PART OF A CAR

A. *General requirements.*—Tanks built under this specification must comply with all provisions of specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in specification 103-W):

This specification covers class ICC-105A500-W tank cars to which have been added A.A.R. details which are not inconsistent therewith.

I.C.C. Specification effective January 7, 1941.

A.A.R. specification effective January 7, 1941.

ICC-1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

ICC-1. (b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. t. u. per square foot, per degree Fahrenheit differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all

openings so as to be weathertight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell. Tanks for use in transportation of liquefied carbon dioxide must have tank shell and manhole nozzle lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.03 B. t. u. per square foot, per degree Fahrenheit differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight.

AAR-1. (a) See paragraph ICC-1 (b).

ICC-2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint must be at least 1250 pounds per square inch.

ICC-2. (b) Opening in tank for manhole nozzle must be reinforced in an approved manner.

ICC-2. (c) Tank heads must be at least as thick at all points as wall of tank.

ICC-4. *Thickness and width of plates.* (a) The minimum thickness of plates $\frac{1}{16}$ ".

ICC-4. (d) This paragraph does not apply.

AAR-4. (b) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

AAR-5. (a) The tank head shape shall be an ellipsoid of revolution in which the major axis shall equal the diameter of the shell and the minor axis shall be one-half of this.

ICC-6. (b) Rivets, if used for attaching anchor, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{5}{8}$ inch nominal diameter prohibited.

Anchor rivets must be protected on the inside of tank by an approved design of housing.

ICC-6. (c) This paragraph does not apply.

AAR-8. (c) Anchor rivets, if used, must have their heads on the inside of the tank shell covered and protected from the lading by a liquid-tight housing of approved design. The lower portion of the housing must be fusion-welded to, and stress-relieved with, the tank shell as a unit. After the rivets have been driven and calked, the top portion of the housing must be secured to the top of the lower portion by an approved method of welding, which welding need not be stress-relieved. A hole must be provided through tank shell, under each housing to permit making air pressure test. Each test hole must be tightly closed after completion of test with an approved plug.

ICC-9. *Expansion dome.* (a) Expansion dome prohibited.

ICC-9. (b) This paragraph does not apply.

ICC-9. (c) This paragraph does not apply.

AAR-9. (a) This paragraph does not apply.

ICC-10. *Manhole nozzle, cover, and protective housing.* (a) Manhole nozzle must be of forged or rolled steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

ICC-10. (b) Manhole cover must be of forged or rolled steel at least $2\frac{1}{4}$ inches thick machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

ICC-10. (c) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

ICC-10. (d) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other appurtenances mounted thereon, must be made tight against vapor pressure.

ICC-10. (e) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with an approved riveted pin or rod with nuts and cotters. Openings in wall of housing must be equipped with screw plugs or other closures.

AAR-10. *Manhole cover.* (a) For recommended dimensions and tolerances of manhole cover see figure 8.

ICC-11. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 500 pounds per square inch without leakage. The valves must be directly bolted to seatings on manhole cover. Pipe connections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

ICC-11. (b) The interior pipes of the liquid and gas discharge valves, except as prescribed in paragraphs 11 (d) and 11 (e), may be equipped with check valves of an approved design.

ICC-11. (c) Gauging Device, Sampling Valve, and Thermometer Well are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 500 pounds per square inch without leakage. Interior pipes of the gauging device and

sampling valves must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

ICC-11. (d) Tanks for use in the transportation of liquefied hydrocarbon and liquefied petroleum gases must have the interior pipes of the liquid and gas discharge valves equipped with check valves of an approved design.

ICC-12. (a) This paragraph does not apply.

ICC-13. *Bottom discharge outlets.* (a) Bottom discharge outlet prohibited.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 375 pounds per square inch.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) The safety valves must be set to open at a pressure of not exceeding 375 pounds per square inch. (For tolerance see paragraph 18.)

ICC-14. (d) This paragraph does not apply.

ICC-14. (e) Tanks for use in the transportation of liquefied carbon dioxide must be equipped with one safety valve of approved design set to open at a pressure not exceeding 375 pounds per square inch and one frangible disc device of approved design set to function at a pressure less than the test pressure of the tank. The discharge capacity of each of these safety devices must be sufficient to prevent building up of pressure in tank in excess of 375 pounds per square inch. Tanks must also be equipped with two pressure-regulating valves of approved design, one set to open at 300 pounds per square inch pressure and one set to open at 333 pounds per square inch pressure. Each pressure-regulating valve and safety device must have its final discharge piped to the outside of the dome.

AAR-14. (a) Safety valve must be of approved design. See Appendix "A" for formula for calculating discharge capacity of valve and method of testing sample valve of a particular design to determine its actual discharge capacity which must

at least equal the capacity calculated as necessary to prevent building up pressure in the tank in excess of 375 pounds per square inch.

AAR-14. (b) This paragraph does not apply.

ICC-15. *Fixtures, reinforcements, and attachments, not otherwise specified.* (a) Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

AAR-15. (b) This paragraph does not apply.

ICC-16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not subject to rapid deterioration by the lading.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 500 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

ICC-17. (c) Tests of exterior heater systems not a specification requirement.

ICC-17. (d) After anchor rivet housings are in place these housings must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 375 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of the welded joint and for the full length of all welded joints. The weight of the hammer in pounds shall approximately equal the thickness of the shell in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test, each tank must be tested as prescribed in paragraph ICC-17 (a).

AAR-17. (b) See paragraph ICC-17 (d).

AAR-17. (c) See paragraph ICC-17 (a).

ICC-18. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 375 pounds per square inch and be vapor-tight at 300 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks, anchor rivet housings and safety valves.* (a) Tanks

must be retested at intervals of 5 years or less to a pressure as prescribed in paragraph 17 (a), except that the anchor rivet housings must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet housings must be retested to a pressure as prescribed in paragraph 17 (d); and safety valves must be retested to a pressure as prescribed in paragraphs 14 (c) and 18. Tanks must be retested before being returned to service after any repairs requiring welding. Reports of retests must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

AAR-19. (b) See paragraph ICC-19 (a).

ICC-20. (b) ICC-105A500-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (g) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-20. (j) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraph 20 (c) and (d). This mark must also be stenciled on the jacket immediately below the dome platform and directly behind the ladder, or ladders, if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of Tank
000,000 pounds.

SHIPPING CONTAINER SPECIFICATION 105A600-W—LAGGED FUSION-WELDED STEEL TANKS TO BE MOUNTED ON OR TO FORM PART OF A CAR

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 103-W, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 103-W):

This specification covers Class ICC-105A600-W tank cars to which have been added A. A. R. details which are not inconsistent therewith.

I. C. C. Specification effective January 7, 1941.

A. A. R. Specification effective January 7, 1941.

ICC-1. *Type.* (a) Tanks built under this specification must be cylindrical, with heads dished convex outward. The tank must be provided with a manhole nozzle and cover on top of the tank of sufficient diameter to permit access to the interior of the tank and to provide

for the proper mounting of venting, loading, unloading, sampling and safety valves, gauging device, thermometer well, and a protective housing on the cover. Other openings in the tank prohibited, except those required for testing anchor rivets and their protective coverings.

ICC-1. (b) The tank shell and manhole nozzle must be lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.075 B. t. u. per sq. ft., per degree F. differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight. When heater systems are attached to exterior of tank, the lagging over each pipe may be reduced in thickness equivalent to one-half that required for shell. Tanks for use in transportation of liquefied carbon dioxide must have tank shell and manhole nozzle lagged with an approved insulation material of a thickness so that the thermal conductance is not more than 0.03 B. t. u. per square foot, per degree F. differential in temperature per hour. The entire insulation must be covered with a metal jacket, efficiently flashed around all openings so as to be weathertight.

AAR-1. (a) See paragraph ICC-1 (b).

ICC-2. *Bursting pressure.* (a) The calculated bursting pressure, based on the lowest tensile strength of the plate and the efficiency of the longitudinal welded joint, must be at least 1,500 pounds per square inch.

ICC-2. (b) Opening in tank for manhole nozzle must be reinforced in an approved manner.

ICC-2. (c) Tank heads must be at least as thick at all points as wall of tank.

ICC-4. *Thickness and width of plates.* (a) The minimum thickness of plates $\frac{1}{4}$ inch.

ICC-4. (d) This paragraph does not apply.

AAR-4. (b) This paragraph does not apply.

AAR-4. (c) Car must have underframe.

AAR-5. (a) The tank head shape shall be an ellipsoid of revolution in which the major axis shall equal the diameter of the shell and the minor axis shall be one-half of this.

ICC-6. (b) Rivets, if used for attaching anchor, must be driven hot and calked inside. For computing rivet areas the effective diameter of a driven rivet is the diameter of its reamed hole, which hole must in no case exceed nominal diameter of rivet by more than $\frac{1}{16}$ inch. Use of rivets of less than $\frac{3}{8}$ inch nominal diameter prohibited.

Anchor rivets must be protected on the inside of tank by approved design of housing.

ICC-6. (c) This paragraph does not apply.

AAR-8. (c) Anchor rivets, if used, must have their heads on the inside of the tank shell covered and protected from the lading by a liquid-tight housing of ap-

proved design. The lower portion of the housing must be fusion welded to, and stress-relieved with, the tank shell as a unit. After the rivets have been driven and calked, the top portion of the housing must be secured to the top of the lower portion by an approved method of welding, which welding need not be stress-relieved. A hole must be provided through tank shell, under each housing to permit making air pressure test. Each test hole must be tightly closed after completion of test with an approved plug.

ICC-9. *Expansion dome.* (a) Expansion dome prohibited.

ICC-9. (b) This paragraph does not apply.

ICC-9. (c) This paragraph does not apply.

AAR-9. (a) This paragraph does not apply.

ICC-10. *Manhole nozzle, cover, and protective housing.* (a) Manhole nozzle must be of forged or rolled steel at least 18 inches inside diameter having approved wall thicknesses and dimensions.

ICC-10. (b) Manhole cover must be of forged or rolled steel at least 2 1/4 inches thick machined to approved dimensions. Manhole cover must be attached to manhole nozzle by through or stud bolts not entering tank.

ICC-10. (c) The shearing value of the bolts attaching protective housing to manhole cover must not exceed 70 percent of shearing value of bolts attaching manhole cover to manhole nozzle.

ICC-10. (d) All joints between manhole cover and manhole nozzle, and between manhole cover and valves or other appurtenances mounted thereon, must be made tight against vapor pressure.

ICC-10. (e) Protective housing of cast or pressed steel must be bolted to manhole cover. Housing must be equipped with a steel cover that can be securely closed. Housing cover on tanks used for the transportation of inflammable compressed gases must be provided with an opening equipped with an approved weatherproof covering and having an area at least equal to the total safety valve discharge area. Housing cover must have suitable stop to prevent cover striking loading or unloading connections and be hinged on one side only with an approved riveted pin or rod with nuts and cotters. Openings in wall of housing must be equipped with screw plugs or other closures.

AAR-10. *Manhole cover.* (a) For recommended dimensions and tolerances of manhole cover see Figure 8.

ICC-11. *Venting, and loading and discharging valves.* (a) These valves must be of approved type, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 600 pounds per square inch without leakage. The valves must be directly bolted to seating on manhole cover. Pipe con-

nections of the valves must be closed with approved screw plugs chained or otherwise fastened to prevent misplacement.

ICC-11. (b) The interior pipes of the liquid and gas discharge valves, except as prescribed in paragraphs 11 (d) and 11 (e), may be equipped with check valves of an approved design.

ICC-11. (c) Gauging Device, Sampling Valve and Thermometer Well, are required on tanks used for the transportation of inflammable gases. They must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 600 pounds per square inch without leakage. Interior pipes of the gauging device and sampling valves must be equipped with check valves of an approved design. Thermometer well must be closed with screw plug.

ICC-11. (d) Tanks for use in the transportation of liquefied hydrocarbon and liquefied petroleum gases must have the interior pipes of the liquid and gas discharge valves equipped with check valves of an approved design.

ICC-12. (a) This paragraph does not apply.

ICC-13. *Bottom discharge outlets.*

(a) Bottom discharge outlet prohibited.

ICC-13. (b) This paragraph does not apply.

ICC-13. (c) This paragraph does not apply.

AAR-13. (a) This paragraph does not apply.

AAR-13. (b) This paragraph does not apply.

AAR-13. (c) This paragraph does not apply.

AAR-13. (d) This paragraph does not apply.

AAR-13. (e) This paragraph does not apply.

AAR-13. (f) This paragraph does not apply.

AAR-13. (g) This paragraph does not apply.

ICC-14. *Safety valves.* (a) The tank must be equipped with one or more safety valves of approved type, made of metal not subject to rapid deterioration by lading and mounted on manhole cover. The total valve discharge capacity must be sufficient to prevent building up of pressure in tank in excess of 450 pounds per square inch.

ICC-14. (b) This paragraph does not apply.

ICC-14. (c) The safety valves must be set to open at a pressure of not exceeding 450 pounds per square inch. (For tolerance see paragraph 18.)

ICC-14. (d) This paragraph does not apply.

ICC-14. (e) Tanks for use in the transportation of liquefied carbon dioxide must be equipped with one safety valve of approved design set to open at a pressure not exceeding 450 pounds per square inch and one frangible disc device

of approved design set to function at a pressure less than the test pressure of the tank. The discharge capacity of each of these safety devices must be sufficient to prevent building up of pressure in tank in excess of 450 pounds per square inch. Tanks must also be equipped with two pressure-regulating valves of approved design, one set to open at 360 pounds per square inch pressure and one set to open at 400 pounds per square inch pressure. Each pressure-regulating valve and safety device must have its final discharge piped to the outside of the dome.

AAR-14. (a) Safety valve must be of approved design. See Appendix "A" for formula for calculating discharge capacity of valve and method of testing sample valve of a particular design to determine its actual discharge capacity which must at least equal the capacity calculated as necessary to prevent building up pressure in the tank in excess of 450 pounds per square inch.

AAR-14. (b) This paragraph does not apply.

ICC-15. *Fixtures, reinforcements, and attachments, not otherwise specified.*

(a) Attachments, other than the anchorage and those mounted on manhole nozzle and cover, are prohibited. Heater systems may be applied to exterior of tank by tank bands or other approved method.

AAR-15. (b) This paragraph does not apply.

ICC-16. *Plugs for openings.* (a) Plugs must be of approved type, with standard pipe thread, and of metal not subject to rapid deterioration by the lading.

ICC-17. *Tests of tanks.* (a) Each tank must be tested, after anchorage is applied, and before anchor rivet covers and the tank lagging are applied, by completely filling tank and manhole nozzle with water or other liquid of similar viscosity, having a temperature which must not exceed 100° F. during test, and applying a pressure of 600 pounds per square inch. The tank must hold the prescribed pressure for at least 30 minutes without leakage or distress.

ICC-17. (c) Tests of exterior heater systems not a specification requirement.

ICC-17. (d) After anchor rivet housings are in place these housings must be tested by applying an air pressure of 100 pounds per square inch through openings in tank shell and must be tight against leakage.

AAR-17. *Hammer test.* (a) The tank shall be subjected to a hydrostatic pressure of 450 pounds per square inch and while subject to this pressure shall be given a thorough hammer or impact test. This impact test shall consist of striking the plate at six-inch intervals on both sides of the welded joint and for the full length of all welded joints. The weight of the hammer in pounds shall approximately equal the thickness of the shell

in tenths of an inch, but not to exceed ten pounds. The plates shall be struck with a sharp swinging blow. The edges of the hammer shall be rounded so as to prevent defacing the plate. Following the impact test, each tank must be tested as prescribed in paragraph ICC-17 (a).

AAR-17. (b) See paragraph ICC-17 (d).

AAR-17. (c) See paragraph ICC-17 (a).

ICC-18. *Tests of safety valves.* (a) Each valve must be tested by air or gas before being put into service. The valve must open at a pressure not exceeding 450 pounds per square inch and be vapor-tight at 360 pounds per square inch, which limiting pressures must not be affected by any auxiliary closure or other combination.

AAR-18. (a) This paragraph does not apply.

ICC-19. *Retests of tanks, anchor rivet housings and safety valves.* (a) Tanks must be retested at intervals of 5 years or less to a pressure as prescribed in paragraph 17 (a), except that the anchor rivet housings must not be removed and that the tank lagging and jacket need not be removed unless the pressure in the tank drops during the test period, indicating leakage; anchor rivet housings must be retested to a pressure as prescribed in paragraph 17 (d); and safety valves must be retested to a pressure as prescribed in paragraphs 14 (c) and 18. Tanks must be retested before being returned to service after any repairs requiring welding. Reports must be rendered as prescribed in paragraph 21.

AAR-19. (a) See paragraph ICC-19 (a).

AAR-19. (b) See paragraph ICC-19 (a).

ICC-20. (b) ICC-105A600-W in letters and figures at least $\frac{3}{8}$ inch high stamped plainly and permanently into the metal near the center of both outside heads of the tank by the tank builder. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high by the party assembling the completed car.

ICC-20. (g) This paragraph does not apply.

ICC-20. (h) This paragraph does not apply.

ICC-20. (j) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least $\frac{3}{8}$ inch high into the metal of the tank immediately below the mark specified in paragraph 20 (c) and (d). This mark must also be stenciled on the jacket immediately below the dome platform and directly behind the ladder, or ladders, if there is a ladder on each side of the tank, in letters and figures at least 2 inches high as follows:

Water Capacity of Tank
000,000 pounds.

SPECIFICATION 108—LINED, COATED, OR TREATED WOODEN-STAVE METAL-HOOPED TANKS FOR MOUNTING ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

1. *Type.* (a) Tanks built under this specification may be cylindrical, elliptical, or rectangular, with flat heads inserted inside the ends of the tank in rabbets or tied to the end of the tank and to each other by rods on the outside of the tank, and must have at least one filling and discharge opening in the top of the tank which can be securely closed. The tank must have no bottom or side openings, but may be provided with a recess cut in the bottom of the inside of the tank not over 12 inches in diameter and 1 inch deep to form a well or sump to facilitate unloading.

2. *Bursting strength.* (a) Not specified.

3. *Material.* (a) All tank staves and heads must be made of a good grade of well-dried tank lumber of a minimum thickness of 3 inches, stock size, as free from shakes and knots as possible. Lumber used for closure of filling and discharge openings and tank covers may be of 2-inch stock size. Tank hops and tie-rods must be made of suitable metal. Metal reinforcing rings on the heads when required must be made at least one-half inch thick.

4. *Thickness of material.* (a) Tank hoops and tie-rods must not be less than three-fourths inch in diameter. (See also par. 3.)

5. *Tank heads.* (a) Tank heads must be made flat, of one or more thicknesses of lumber. Outside heads must be reinforced by flat or angle metal rings at least 3 inches wide and one-half inch thick and having an outside diameter not exceeding by more than twice the thickness of the ring that of the diameter of the outside heads, which must be at least 6 inches larger in diameter than the outside diameter of the tank body. Rings and projection of the heads must be perforated to receive the tie-rods which extend from ring to ring, thus securing the outside heads to the tank. When tanks are mounted vertically on cars, the metal reinforcing rings of the outside heads may be omitted, in which case the upper end of the tank may be closed with a cover built up with the underside flat and constructed with wooden top battens of at least 4 inches by 6 inches, stock size. The cover must be larger than the tank and have a projection over the side of the tank of at least 3 inches on all sides. The battens holding the cover planking together must extend beyond the tank in order to receive the holding-down bolts which secure the tank to the underframe of the car on which it is mounted. The cover may be provided with one manhole of suitable size to permit access to the interior of the tank. The manhole must

be provided with a wooden cover at least 2 inches thick built up in one piece with top battens, and must be securely fastened in place. The manhole cover must be provided with a filling and discharge opening, securely closed.

6. *Lining, coating, or treatment.* (a) The entire interior of the tank must be lined or coated or treated as follows:

(b) Lined with pure unvulcanized para or plantation stock rubber, free from adulterants or loading, at least one-sixteenth inch in thickness, or other approved rubber compound at least one-sixteenth inch in thickness, cemented directly to the lumber. The joints in the rubber lining must be made by either a butt joint with a cover strip or a lap weld, but in all cases the joints between rubber and rubber must be made by welding the layers together with a pressure roller. The joints in the rubber lining may also be vulcanized. Rubber cement used for applying the rubber lining must be made of the same stock as the rubber lining, and any coloring pigment used in this cement solution must not react with hydrochloric acid to form a gas.

(c) Coated with asphaltum, coal tar, pitch, or other suitable material which will remain in plastic condition and not be subject to destruction by the lading.

(d) Treated with a material suitable for withstanding the action of the acid.

7. *Painting.* (a) All outside wooden and metal parts of the tank must be painted with an acid-resisting paint or with hot application of pitch to fill in all crevices.

8. *Joints.* (a) Joints between outside heads and ends of staves of tank and between filling and discharge openings and their covers must be made tight against leakage by the use of soft-rubber gaskets or by the cementing together of the lining of the tank and the lining of the heads. Joints between the staves may be calked, if necessary, with the same material with which the tank is lined, coated, or treated.

9. *Plugs for openings.* (a) Filling and discharge openings when not closed with a cover may be closed by a plug tapered to fit the opening, and the top diameter of the plugs must be at least 1 inch larger than the top diameter of openings. Plugs must be securely fastened in position, but need not be pressure tight.

10. *Test of tanks.* (a) Before a completed tank is placed in service there must be tightly inserted into or attached to the filling opening a pipe of such length that a hydrostatic head of at least 3 feet above the top of the interior of the tank is established by filling the tank and pipe with water having a temperature not exceeding 100° F. Tank must hold the water for not less than 30 minutes without leak or evidence of distress.

11. *Marking.* (a) Each tank must be marked, thus certifying that the tank complies with all the requirements of

this specification. These marks must be as follows:

(b) ICC-108 in letters and figures not less than $\frac{3}{8}$ inch high, stamped plainly and permanently into the lumber near the center of one outside head of the tank. This mark must also be stenciled on the tank in letters and figures at least 2 inches high.

(c) Initials of manufacturer and date of original test of tank in letters and figures not less than $\frac{3}{8}$ inch high, stamped plainly and permanently into the lumber of the tank immediately below the stamped mark specified in paragraph 11 (b). These initials and date must also be stenciled on the tank in letters and figures at least 2 inches high.

(d) "Rubber-lined tank-pressure test not required," or "Coated tank-pressure test not required," stenciled on the tank immediately below the stenciled mark specified in paragraph 11 (c).

12. *Reports.* (a) Before a tank car is placed in service the party assembling the completed car must furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in approved form certifying that the tank and its equipment comply with all the requirements of this specification. In case of alterations of the tank or equipment therefor from original design, a similar report must be rendered to the same parties.

SPECIFICATION 108A—METAL-JACKETED, COATED, WOODEN-STAVE METAL-HOOPED TANKS FOR MOUNTING ON OR TO FORM PART OF A CAR

(Specification effective January 7, 1941)

A. *General requirements.* Tanks built under this specification must comply with all provisions of Specification 108, except as modified in the following paragraphs (paragraph numbers refer to like numbers in Specification 108):

1. *Type.* (a) Tanks built under this specification must be cylindrical, with flat heads inserted inside the ends of the tank in rabbets or tied to the end of the tank and to each other by rods on the outside of the tank, and must have at least one filling and discharge opening in the top of the tank which can be securely closed. The tank must have no bottom or side openings, but may be provided with a recess cut in the bottom of the inside of the tank not over 12 inches in diameter and 1 inch deep to form a well or sump to facilitate unloading.

(b) Tank must be inclosed within a metal jacket. The space between the wooden tank and the metal jacket must be filled with material not subject to destruction by the lading.

3. (b) Plates for metal jacket may be made of open-hearth boiler-plate steel of flange quality, or ordinary rolled steel. The minimum thickness of plates for the metal jacket, including thickness of each plate at rivet seams, must be as follows:

Diameter of tanks	Bottom sheet	Center shell sheet	Other shell sheets	Dome sheets	Tank heads
Up to 96 inches.....	Inch $\frac{1}{2}$	Inch $\frac{1}{2}$	Inch $\frac{1}{4}$	Inch $\frac{1}{2}$	Inch $\frac{1}{4}$

Rivets may be of the same quality as used for steam boilers and other pressure vessels or of ordinary steel.

5. (b) The tank heads of the metal jacket must be flat and flanged for riveting on the outside of the tank.

6. (e) The open spaces between the wooden tank and the metal jacket must be filled with asphaltum, coal tar, pitch, or other suitable material which will remain in plastic condition and not be subject to destruction by the lading.

11. (b) ICC-108A in letters and figures not less than $\frac{3}{8}$ inch high, stamped plainly and permanently into the metal near the center of one head of the jacket. This mark must also be stenciled on the jacket in letters and figures at least 2 inches high.

(c) Initials of manufacturer and date of original test of tank in letters and figures not less than $\frac{3}{8}$ inch high, stamped plainly and permanently into the metal of the jacket immediately below the stamped mark specified in paragraph 11 (b). These initials and date must also be stenciled on the jacket in letters and figures at least 2 inches high.

(d) "Coated, wooden-lined tank-pressure test not required," stenciled on the jacket immediately below the stenciled mark specified in paragraph 11 (c).

13. *Riveting.* (a) All seams formed in the manufacture of the jacket and in the attachment of fixtures and connections may be single riveted. Seams must be riveted metal to metal without interposition of other material. The efficiency of the seams, when single riveted, must be at least 45 percent and when double riveted, must be at least 70 percent of the strength of the thinnest plate specified in paragraph 3 (b).

14. *Calking.* (a) All seams and rivets in the metal jacket must be calked on the outside when necessary to prevent seepage of intermediate filler.

(b) The edges of steel plates at all riveted seams must be prepared for calking so that the angle of the calking edge will be between 60 and 70 degrees with the flat surface of the plate, except that the ends of the bottom sheet, edges of upper sheets at ends of tank, and edges of tank-head flanges must be at right angles to the surface of the plates. The extreme calking edge distance, measured from center line of rivet hole, must be not less than one and one-half times the diameter of the hole and not more than that distance plus one-quarter inch.

[Here follows Parts 4 to 8, inclusive, which will appear in the next issue.]

[F. R. Doc. 40-5395; Filed, December 6, 1940; 10:03 a. m.]

Notices

WAR DEPARTMENT.

[Contract No. W-398-qm-8278 (O. I. #173)]

SUMMARY OF CONTRACT FOR SUPPLIES

CONTRACTOR: GENERAL MOTORS CORPORATION (CHEVROLET DIVISION)

Contract for: Trucks, with various bodies.

Amount: \$10,050,418.31.

Place: Holabird Quartermaster Depot, Baltimore, Maryland.

This contract, entered into this 6th day of August 1940.

Scope of this contract. The contractor shall furnish and deliver trucks with various types of bodies, as shown on the attached Schedule "A", Total \$10,050,418.31, in strict accordance with the specifications, schedules and drawings, all of which are made a part hereof.

Changes. Where the supplies to be furnished are to be specially manufactured in accordance with drawings and specifications, the contracting officer may at any time, by a written order, and without notice to the sureties, make changes in the drawings or specifications, except Federal Specifications. Changes as to shipment and packing of all supplies may also be made as above provided.

Delays—Liquidated damages. If the contractor refuses or fails to make delivery of the materials or supplies within the time specified in Article 1, or any extension thereof, the actual damage to the Government for the delay will be impossible to determine, and in lieu thereof the contractor shall pay to the Government, as fixed, agreed, and liquidated damages for each calendar day of delay in making delivery, the amount as set forth in the specifications or accompanying papers, and the contractor and his sureties shall be liable for the amount thereof.

Liquidated damages shall be assessed against the contractor in the amount * * * per vehicle for each calendar day of delay in making delivery.

Payments. The contractor shall be paid, upon the submission of properly certified invoices or vouchers, the prices stipulated herein for articles delivered and accepted or services rendered, less deductions, if any, as herein provided. Unless otherwise specified, payments will be made on partial deliveries accepted by the Government when the amount due on such deliveries so warrants; or, when requested by the contractor, payments for accepted partial deliveries shall be made whenever such payments would equal or exceed either \$1,000 or 50% of the total amount of the contract.

Variations: Quantities listed hereon are subject to increase.

Bond: Not required. Discount: 5% 20 calendar days.

Chargeable to: Procurement Authorities.

QM 1801-P-37-3053-A-
0525.003-01 (net)..... \$5,803,709.93
NG 15459-P-63-3030-A-1405-
01 (net)..... 3,744,687.46
Total gross amount..... 10,050,418.31

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5535; Filed, December 12, 1940;
9:43 a. m.]

[Contract No. W 535 ac-16232 (3869)]

SUMMARY OF CONTRACT FOR SUPPLIES

CONTRACTOR: WRIGHT AERONAUTICAL
CORPORATION

Contract for: * * * Aeronautical En-
gines, Spare Parts Therefor and Data
for the U. S. Navy.

Amount, \$4,093,716.80.

Place: Materiel Division, Air Corps, U.
S. Army, Wright Field, Dayton, Ohio.

The supplies and services to be ob-
tained by this instrument are authorized
by, are for the purpose set forth in, and
are chargeable to Procurement Authority
AC 34 P 12-3037 A 0705-01, the available
balance of which is sufficient to cover
cost of same.

This Contract, entered into this fourth
day of October 1940.

ARTICLE 1. *Scope of this contract.* The
contractor shall furnish and deliver to
the Government all of the articles and
data as set forth more particularly in Ar-
ticle 16 hereof, for the consideration
stated, Four Million Ninety Three Thou-
sand Seven Hundred Sixteen Dollars and
Eighty Cents (\$4,093,716.80) in strict ac-
cordance with the specifications, sched-
ules and drawings, all of which are made
a part hereof.

ART. 2. *Changes.* Where the supplies
to be furnished are to be specially manu-
factured in accordance with drawings
and specifications, the contracting officer
may at any time, by a written order, and
without notice to the sureties, make
changes in the drawings or specifications,
except Federal Specifications. Changes
as to shipment and packing of all sup-
plies may also be made as above provided.

ART. 5. *Delays—Damages.* If the con-
tractor refuses or fails to make deliveries
of the materials or supplies within the
time specified in Article 1, or any exten-
sion thereof, the Government may by
written notice terminate the right of the
contractor to proceed with deliveries or
such part or parts thereof as to which
there has been delay.

ART. 8. *Payments.* The contractor
shall be paid, upon the submission of
properly certified invoices or vouchers,
the prices stipulated herein for articles
delivered and accepted or services ren-
dered, less deductions, if any, as herein
provided. Unless otherwise specified,
payments will be made on partial deliv-
eries accepted by the Government when

the amount due on such deliveries so
warrants; or, when requested by the con-
tractor, payments for accepted partial
deliveries shall be made whenever such
payments would equal or exceed either
\$1,000 or 50 percent of the total amount
of the contract.

ART. 16. *Articles, supplies and data
called for.* The Contractor shall furnish
and deliver to the Government all of the
following articles in the quantities and
at the prices indicated therefor:

Item 1. * * * Aeronauti- cal Engines, total price.....	\$1,700,468.64
Item 2. Certain spare parts for all of the engines, total price not exceeding.....	272,074.98
Item 3. * * * data and drawings, at a cost of not to exceed.....	600.00
Item 4. * * * Aeronauti- cal Engines, total price.....	1,709,661.60
Item 5. Certain spare parts for all of the engines, called for under Item 4, to- tal price not exceeding.....	410,311.58
Item 6. * * * data and drawings covering the aero- nautical engines called for under Item 4, at a cost of not to exceed.....	600.00

Partial payments will be made as the
work progresses at the end of each calen-
dar month or as soon thereafter as prac-
ticable on authenticated statements of
expenditures of the Contractor approved
by the Contracting Officer.

ART. 19. *Advance payments.* Advance
payments may be made from time to
time for the supplies called for, when the
Secretary of War deems such action
necessary in the interest of the National
Defense.

ART. 23. *Special conditions.* The Con-
tractor represents that the fixed prices
established in this contract include no
element on account of or representing
cost of expansion of plant facilities (in-
cluding land, buildings, machinery, tools
and equipment) of vendors or subcon-
tractors. In the event that it shall prove
necessary, in order to enable the Con-
tractor to perform this contract, that
funds be made available to such vendors
or subcontractors for such expansion of
facilities and the Government shall not
enter directly into arrangements with
such vendors or subcontractors provid-
ing for such expansion, the prices herein
established shall be negotiated to provide
for the inclusion therein as an element
of cost funds which are necessarily paid
by the Contractor to such vendors or
subcontractors for such expansion of
facilities.

ART. 24. *Termination when contractor
not in default.* If, in the opinion of the
Contracting Officer upon the approval of
The Secretary of War, the best interests
of the Government so require, this con-
tract may be terminated by the Gov-
ernment, even though the contractor be
not in default, by a notice in writing
relative thereto from the Contracting
Officer to the contractor.

ART. 29. *Price adjustment.* The con-
tract prices stated in this contract for
engines and spare parts are subject to

adjustments for changes in labor and
material costs.

It is expressly agreed that quotas for
labor will not be altered on account of
delays in the completion of the engines
and spare parts.

ART. 32. *Title to property where par-
tial payments are made.* The title to
all property upon which any partial pay-
ment is made prior to the completion of
this contract, shall vest in the
Government.

ART. 34. *Fire insurance.* The contrac-
tor agrees to insure against fire all prop-
erty in its possession upon which a partial
payment is about to be made, such in-
surance to be in a sum at least equal to
the amount of such payment plus all
other partial payments.

This contract is authorized under the
provisions of paragraph 4g (1), A. B.
5-240.

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5531; Filed, December 12, 1940;
9:41 a. m.]

[Contract No. W 6970 qm-1 (O. I. No. 1-41)]

SUMMARY OF COST-PLUS-A-FIXED-FEE ARCHITECT-ENGINEER SERVICES¹

ARCHITECT-ENGINEER: GIFFELS & VALLET,
INC., DETROIT, MICHIGAN, AND CHAS. W.
COLE & SON, SOUTH BEND, INDIANA

Amount fixed-fee: \$77,330.00.

Estimated cost of construction project:
\$11,500,000.00.

Type of construction project: Con-
struction of a Shell Loading Plant, in-
cluding necessary Buildings, Utilities, and
Appurtenances.

Location: Union Center, Indiana.

Type of service: Architectural-Engi-
neering.

The supplies and services to be ob-
tained by this instrument are authorized
by, are for the purpose set forth in, and
are chargeable to, Procurement Author-
ity No. ORD 6793 P2-3211 A0141-01 the
available balance of which is sufficient to
cover the cost of same.

This Contract, entered into this 21st
day of October 1940.

Description of the work. The Archi-
tect-Engineer shall perform all the nec-
essary services provided under this con-
tract for the following described project:
The construction and equipping of a
plant near Union Center, Indiana, for
the loading of Fixed rounds, shells, boost-
ers and fuses including the manufacture
of Amatol and Nitrate of ammonia from
neutral nitrate of ammonia solution, at
Union Center, Indiana, and estimated to
cost \$11,500,000.00.

*Data to be furnished by the Govern-
ment.* The Government shall furnish

¹ Collateral Contract to Contract No. W-
ORD-478, dated Nov. 7, 1940. Between The
United States of America and Todd & Brown,
Inc.

the Architect-Engineer available schedules of preliminary data, layout sketches, and other information respecting sites, topography, soil conditions, outside utilities and equipment as may be essential for the preparation of preliminary sketches and the development of final drawings and specifications.

Fixed-fee and reimbursement of expenditures. In consideration for his undertakings under the contract, the Architect-Engineer shall be paid the following:

A fixed fee in the amount of seventy seven thousand three hundred thirty and No/100 Dollars (\$77,330.00) which shall constitute complete compensation for the Architect-Engineer's services.

Reimbursement for the following expenditures:

The actual cost of expenditures made by the Architect-Engineer under the provisions of Article IV and Article VII of this contract, subject to the provisions of paragraph 1 b (2) above.

Payments shall be made on vouchers approved by the Contracting Officer on standard forms, as soon as practicable after the submission of statements, with original certified payrolls, receipted bills for all expenses including materials, supplies and equipment, and all other supporting data and the amount of the Architect-Engineer's fixed fee earned.

All drawings, specifications, and blue prints are to become the property of the Government on completion of payments.

Changes in scope of project. The Contracting Officer may at any time, by a written order, make changes in the scope of the work contemplated by this contract.

The Government may terminate this contract at any time and for any cause by a notice in writing from the Contracting Officer to the Architect-Engineer.

This contract is authorized by the following laws:

Public No. 309—76th Congress, approved August 7, 1939.

Public No. 703—76th Congress, approved July 2, 1940.

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5533; Filed, December 12, 1940;
9:42 a. m.]

[Contract No. W 6970 qm-2 (O. I. No. 2-41)]

SUMMARY OF COST-PLUS-A-FIXED-FEE CONSTRUCTION CONTRACT

CONTRACTOR: BATES & ROGERS CONSTRUCTION CORPORATION, 111 WEST WASHINGTON STREET, CHICAGO, ILLINOIS¹

Fixed-fee: \$388,889

Contract for: Construction of a Shell Loading Plant, including necessary build-

¹ Collateral Contract to Contract No. W-ORD-478, dated Nov. 7, 1940. Between the United States of America and Todd & Brown, Inc.

ings, utilities and appurtenances, together with the purchase and installation of equipment therefor.

Place: Union Center, Indiana.

Estimated cost of project: \$11,111,111.

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the following procurement authorities, the available balances of which are sufficient to cover the cost of the same:

ORD 6793 P2-3211 A 0141-01.

ORD 6793 P2-3211 A (0141)-116-01—Contract Authorization.

This Contract, entered into this 30th day of October 1940.

Statement of work. The Contractor shall, in the shortest possible time, furnish the labor, materials, tools, machinery, equipment, facilities, supplies not furnished by the Government, and services, and do all things necessary for the completion of the following work: The construction and equipping of a Shell Loading Plant, including necessary buildings, utilities and appurtenances, at Union Center, Indiana.

It is estimated that the total cost of the construction work covered by this contract will be approximately Eleven Million One Hundred Eleven Thousand One Hundred Eleven Dollars (\$11,111,111), exclusive of the Contractor's fee.

In consideration for his undertaking under this contract the Contractor shall receive the following:

(a) Reimbursement for expenditures as provided in article II.

(b) Rental for Contractor's equipment as provided in article II.

(c) A fixed fee in the amount of Three Hundred Eighty-Eight Thousand Eight Hundred Eighty-Nine Dollars (\$388,889) which shall constitute complete compensation for the Contractor's services, including profit and all general overhead expenses.

The Contracting Officer may, at any time, by a written order and without notice to the sureties, make changes in or additions to the drawings and specifications, issue additional instructions, require additional work, or direct the omission of work covered by the contract.

The title to all work, completed or in the course of construction, shall be in the Government. Likewise, upon delivery at the site of the work or at an approved storage site and upon inspection and acceptance in writing by the Contracting Officer, title to all materials, tools, machinery, equipment and supplies, for which the Contractor shall be entitled to be reimbursed under article II, shall vest in the Government.

Reimbursement for cost. The Government will currently reimburse the Contractor for expenditures made in accordance with article II upon certification to and verification by the Contracting Officer of the original signed pay rolls for labor, the original paid invoices for materials, or other original papers.

Generally, reimbursement will be made weekly but may be made at more frequent intervals if the conditions so warrant.

Rental for contractor's equipment. Rental as provided in article II for such construction plant or parts thereof as the Contractor may own and furnish shall be paid monthly upon presentation of proper vouchers.

Payment of the fixed-fee. The fixed-fee prescribed in article I shall be compensation in full for the services of the Contractor, including profit and all general overhead expenses. Ninety percent (90%) of said fixed-fee shall be paid as it accrues, in monthly installments based upon the percentage of the completion of the work as determined from estimates made and approved by the Contracting Officer. Upon completion of the work and its final acceptance, any unpaid balance of the fee shall be paid to the Contractor. If the contract is terminated for the convenience of the Government, before completion, the Contractor will be paid that proportion of the prescribed fee which the work actually completed bears to the entire project, less fee payments previously made. If the contract is terminated due to the fault of the Contractor, no additional payments on account of the fee will be made.

Termination of contract by Government. Should the Contractor at any time refuse, neglect, or fail to prosecute the work with promptness and diligence, or default in the performance of any of the agreements herein contained, or should conditions arise which make it advisable or necessary in the interest of the Government to cease work under this contract, the Government may terminate this contract by a notice in writing from the Contracting Officer to the Contractor.

This contract is authorized by the following laws:

Public No. 309—76th Congress, Approved August 7, 1939.

Public No. 703—76th Congress, Approved July 2, 1940.

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5534; Filed, December 12, 1940;
9:43 a. m.]

[Contract No. W 6980 qm-2, O. I. No. 2-41]

SUMMARY OF COST-PLUS-A-FIXED-FEE CONSTRUCTION CONTRACT

CONTRACTOR: WATT & SINCLAIR OF FLORIDA, INC., AND CLEARY BROS. CONSTRUCTION COMPANY, OF 207 ROYAL PALM WAY, PALM BEACH, FLORIDA; AND ROSELAND DRIVE AND GEORGIA AVE., BOX 1228, WEST PALM BEACH, FLORIDA, RESPECTIVELY

Fixed-fee: \$71,308.00

Contract for: Construction of an Air Corps Cantonment Camp, including nec-

essary buildings, temporary structures, utilities and appurtenances thereto.

Place: West Palm Beach, Florida.

Estimated cost of project: \$1,440,552.00.

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the following procurement authorities, the available balances of which are sufficient to cover the cost of the same:

QM 9102 P1-3211 A 0540.063-N

This Contract, entered into this 5th day of November 1940.

Statement of work. The Contractor shall, in the shortest possible time, furnish the labor, materials, tools, machinery, equipment, facilities, supplies not furnished by the Government, and services, and do all things necessary for the completion of the following work: Construction of an Air Corps cantonment camp, including the necessary buildings at West Palm Beach, Florida.

It is estimated that the total cost of the construction work covered by this contract will be approximately one million four hundred forty thousand five hundred fifty-two dollars (\$1,440,552.), exclusive of the Contractor's fee.

In consideration for his undertaking under this contract the Contractor shall receive the following:

(a) Reimbursement for expenditures as provided in article II.

(b) Rental for Contractor's equipment as provided in article II.

(c) A fixed fee in the amount of seventy one thousand three hundred eight dollars (\$71,308.00) which shall constitute complete compensation for the Contractor's services, including profit and all general overhead expenses.

The Contracting Officer may, at any time, by a written order and without notice to the sureties, make changes in or additions to the drawings and specifications, issue additional instructions, require additional work, or direct the omission of work covered by the contract.

The title to all work, completed or in the course of construction, shall be in the Government. Likewise, upon delivery at the site of the work or at an approved storage site and upon inspection and acceptance in writing by the Contracting Officer, title to all materials, tools, machinery, equipment and supplies, for which the Contractor shall be entitled to be reimbursed under article II, shall vest in the Government.

Reimbursement for cost. The Government will currently reimburse the Contractor for expenditures made in accordance with article II upon certification to and verification by the Contracting Officer of the original signed pay rolls for labor, the original paid invoices for materials, or other original papers. Generally, reimbursement will be made weekly but may be made at more frequent intervals if the conditions so warrant.

Rental for contractor's equipment. Rental as provided in article II for such construction plant or parts thereof as the Contractor may own and furnish shall be paid monthly upon presentation of proper vouchers.

Payment of the fixed-fee. The fixed-fee prescribed in article I shall be compensation in full for the services of the Contractor, including profit and all general overhead expenses. Ninety percent (90%) of said fixed-fee shall be paid as it accrues, in monthly installments based upon the percentage of the completion of the work as determined from estimates made and approved by the Contracting Officer.

Termination of contract by Government. Should the Contractor at any time refuse, neglect, or fail to prosecute the work with promptness and diligence, or default in the performance of any of the agreements herein contained, or should conditions arise which make it advisable or necessary in the interest of the Government to cease work under this contract, the Government may terminate this contract by a notice in writing from the Contracting Officer to the Contractor.

This contract is authorized by the following law:

Public No. 703—76th Congress, approved July 2, 1940.

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5536; Filed, December 12, 1940;
9:43 a. m.]

[Contract No. W 6980 qm-1, O.I. No. 1-41]

SUMMARY OF COST-PLUS-A-FIXED-FEE ARCHITECT-ENGINEER SERVICES

Architect-Engineer: Solomon & Keis, Fort Lauderdale, Florida.

Amount Fixed Fee: \$17,050.00.

Estimated Cost of Construction Project: \$1,511,860.00.

Type of Construction Project: Construction of an air corps cantonment camp, including necessary buildings, temporary structures, utilities and appurtenances thereto.

Location: West Palm Beach, Florida.

Type of Service: Architect-Engineer.

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to, Procurement Authority No. QM 9101 P1-3211 A 0540.063 N, the available balance of which is sufficient to cover the cost of same.

This contract, entered into this 8th day of November 1940.

Description of the work. The Architect-Engineer shall perform all the necessary services provided under this contract for the following described project: Construction of an air corps cantonment camp including necessary buildings, at West Palm Beach, Florida and estimated to cost \$1,511,860.00.

Data to be furnished by the Government. The Government shall furnish the Architect-Engineer available schedules of preliminary data, layout sketches, and other information respecting sites, topography, soil conditions, outside utilities and equipment as may be essential for the preparation of preliminary sketches and the development of final drawings and specifications.

Fixed-fee and reimbursement of expenditures. In consideration for his undertakings under the contract, the Architect-Engineer shall be paid the following:

A fixed fee in the amount of Seventeen Thousand Fifty and No/100 Dollars (\$17,050.00) which shall constitute complete compensation for the Architect-Engineer's services.

Reimbursement for the following expenditures: The actual cost of expenditures made by the Architect-Engineer under the provisions of Article IV and Article VII of this contract, subject to the provisions of paragraph 1 b. (2) above.

Payments shall be made on vouchers approved by the Contracting Officer on standard forms, as soon as practicable after the submission of statements, with original certified payrolls, receipted bills for all expenses including materials, supplies and equipment, and all other supporting data and the amount of the Architect-Engineer's fixed fee earned.

All drawings, specifications, and blue prints are to become the property of the Government on completion of payments.

Changes in scope of project. The Contracting Officer may at any time, by a written order, make changes in the scope of the work contemplated by this contract.

The Government may terminate this contract at any time and for any cause by a notice in writing from the Contracting Officer to the Architect-Engineer.

This contract is authorized by the following laws:

Public No. 309—76th Congress, Approved August 7, 1939.

Public No. 703—76th Congress, Approved July 2, 1940.

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5537; Filed, December 12, 1940;
9:44 a. m.]

[Contract No. W-374-ORD-1102]

SUMMARY OF CONTRACT FOR SUPPLIES

CONTRACTOR: FEDERAL SCREW WORKS

Contract for: Booster, * * * and Fuze * * *

Amount: \$2,298,000.00.

Place: Detroit Ordnance District, Detroit, Michigan

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and

are chargeable to the following Procurement Authorities, the available balances of which are sufficient to cover the cost of same:

ORD 6883 P 11-0270 A 1005-01—Item I.

ORD 6859 P 11-0270 A 1005-01—Item II.

This Contract, entered into this 18th day of November, 1940.

Scope of this contract. The contractor shall furnish and deliver Item I * * * Booster, Item II * * * Fuze, for the consideration stated, being a total of Two Million Two Hundred Ninety-eight Thousand Dollars (\$2,298,000.00), in strict accordance with the specifications, schedules and drawings, all of which are made a part hereof.

Changes. Where the supplies to be furnished are to be specially manufactured in accordance with drawings and specifications, the contracting officer may at any time, by a written order, and without notice to the sureties, make changes in the drawings or specifications, except Federal Specifications. Changes as to shipment and packing of all supplies may also be made as above provided.

Payments. The contractor shall be paid, upon the submission of properly certified invoices or vouchers, the prices stipulated herein for articles delivered and accepted or services rendered, less deductions, if any, as herein provided. Payments will be made on partial deliveries accepted by the Government when requested by the contractor, whenever such payments would equal or exceed either \$1,000 or 50 percent of the total amount of the contract.

Quantities. The Government reserves the right to increase the quantity on this contract at the unit price specified in Article 1, such option to be exercised within * * * days from date of this contract.

Performance bond. Contractors shall be required to furnish a performance bond in duplicate in the sum of ten per centum of the total amount of this contract with surety or other security acceptable to the Government to cover the successful completion of this contract.

Liquidated damages. If the contractor refuses or fails to make delivery of the materials or supplies within the time specified in Article 1, or any extension thereof, the actual damage to the Government for the delay will be impossible to determine, and in lieu thereof, the contractor shall pay to the Government, as fixed, agreed, and liquidated damages * * * per cent of the contract price of the undelivered portion for each day of delay in making delivery beyond the dates set forth in the contract for deliveries with a maximum liquidated damage charge of * * * per cent, and the contractor and his sureties shall be liable for the amount thereof.

Termination when contractor not in default. This contract is subject to termination by the Government at any time as its interests may require.

Price adjustments. The contract prices stated in Article 1 are subject to adjustments for changes in labor and materials costs.

This contract is authorized by the Act of July 2, 1940 (Public No. 703—76th Congress).

NEAL H. MCKAY,
Major, Quartermaster Corps,
Assistant to the Director of
Purchases and Contracts.

[F. R. Doc. 40-5532; Filed, December 12, 1940;
9:42 a. m.]

DEPARTMENT OF THE INTERIOR.

Bituminous Coal Division.

[Docket No. 1478-FD]

APPLICATION OF KEYSTONE PUBLIC SERVICE COMPANY FOR EXEMPTION

NOTICE OF AND ORDER CHANGING TIME AND PLACE OF HEARING

An application having been filed pursuant to the provisions of the second paragraph of section 4-A of the Bituminous Coal Act of 1937 by the above-named party with the Bituminous Coal Division and a Notice and Order for Hearing on such matter having been entered on November 18, 1940, by the Director to be held on December 17, 1940, at 10 o'clock in the forenoon of that day at a hearing room of the Bituminous Coal Division in Washington, D. C.; and

It appearing that the convenience of the parties concerned in the above-entitled matter will be best served by holding the hearing on December 17, 1940, at the Post Office Bldg., Oil City, Pa.

It is ordered, That the hearing heretofore set for December 17, 1940, at Washington, D. C., be held on December 17, 1940, at 10 o'clock in the forenoon of that day at a hearing room of the Bituminous Coal Division at the Post Office Bldg., Oil City, Pa.

It is further ordered, That Charles O. Fowler or any other officer or officers of the Bituminous Coal Division designated by the Director thereof for that purpose shall preside at said hearing in such matter. The officer so designated to preside at such hearing is hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to such applicant and to any other person who may have an interest in such pro-

ceeding. Any person desiring to be heard or to be admitted as a party to such proceeding shall file a notice to that effect with the Bituminous Coal Division on or before December 17, 1940.

The matter concerned herewith is in regard to the application filed by the Keystone Public Service Company for exemption from the provisions of section 4 of the Bituminous Coal Act of 1937. The applicant alleges that it is producing coal from certain coal leases held by it in Clarion County, Pennsylvania, and that the coal so produced is consumed in the generation of electric current at its power plant located in Venango County, Pennsylvania; and applicant alleges that such coal so consumed is exempt from the provisions of section 4 of the Bituminous Coal Act of 1937 by virtue of section 4 II (1) thereof.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5565; Filed, December 12, 1940;
11:30 a. m.]

[Docket Nos. A-284, A-298]

PETITION OF DISTRICT BOARD 9 FOR REVISION OF THE MINIMUM PRICE ESTABLISHED FOR COALS OF DISTRICT 9 FOR LOCOMOTIVE FUEL USE BY GULF, MOBILE AND OHIO RAILROAD; PETITION OF TWIN SEAM MINING COMPANY, DISTRICT 13, FOR REVISION OF THE MINIMUM PRICE ESTABLISHED AT MINE INDEX 40 FOR LOCOMOTIVE FUEL FOR GULF, MOBILE AND OHIO RAILROAD

NOTICE OF AND ORDER FOR HEARING AND ORDER OF CONSOLIDATION

Petitions, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named parties;

It is ordered, That the above-entitled matters be consolidated for hearing with the matter in Docket A-354, which also concerns locomotive fuel shipped to the Gulf, Mobile and Ohio Railroad, and which has been set for hearing on January 7, 1941, and that under the applicable provisions of said Act and the rules of the Division the hearing be held on January 7, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That W. A. Cuff or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matters. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or mate-

rial to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 2, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of intervenors or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith in Docket A-284 is in regard to the petition of District Board 9 for a reduction in the minimum price established for the coals of District 9 for locomotive fuel use by the Gulf, Mobile and Ohio Railroad.

The matter concerned herewith in Docket A-298 is in regard to the petition of Twin Seam Mining Company, a producer and code member in District 13, for the reduction of the minimum price established at Mine Index 40 for locomotive fuel for Gulf, Mobile and Ohio Railroad.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5564; Filed, December 12, 1940;
11:29 a. m.]

[Docket No. A-341]

PETITION OF WHEELING VALLEY COAL CORPORATION, COVE HILL COAL COMPANY AND THE BUFFALO COAL AND COKE COMPANY, CODE MEMBERS IN DISTRICT NO. 6, FOR A REDUCTION IN THE EFFECTIVE MINIMUM PRICES FOR EX-RIVER SHIPMENTS INTO MARKET AREAS 11, 12 AND 13

NOTICE OF AND ORDER FOR HEARING

A petition, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named parties;

No. 242—13

It is ordered, That a hearing in the above-entitled matter under the applicable provisions of said Act and the rules of the Division be held on January 13, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Charles O. Fowler or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 8, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of intervenors or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith is in regard to a petition of the Wheeling Valley Coal Corporation, Cove Hill Coal Company and the Buffalo Coal and Coke Company, code member producers in District No. 6 for a reduction in the effective minimum prices for ex-river shipments in Market Areas 11, 12 and 13.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5561; Filed, December 12, 1940;
11:28 a. m.]

[Docket No. A-342]

PETITION OF THE CONSUMERS' COUNSEL DIVISION FOR A PERMANENT ORDER EQUALIZING MINIMUM PRICES FOR SHIPMENT ALL-RAIL AND AS LAKE CARGO FROM DISTRICTS 4, 7, AND 8 TO MARKET AREA 21 AND FOR A TEMPORARY ORDER REDUCING MINIMUM PRICES FROM SAID DISTRICTS FOR SHIPMENT ALL-RAIL TO SAID MARKET AREA UNTIL JANUARY 1, 1941

MEMORANDUM AND ORDER CONCERNING TEMPORARY RELIEF

The original petition in the above-entitled matter, filed with this Division on November 9, 1940, as amended November 26, 1940, prays for the issuance of:

1. An immediate temporary order permitting the sale of bituminous coal in prepared sizes from Districts 4, 7, and 8 to consumers and retail dealers in the switching limits of the city of Detroit for all-rail shipment at the same minimum prices as are now in effect for shipment at lake cargo to Market Area 21, such relief to be effective until January 1, 1941;

2. A permanent order making the minimum price now applicable for shipment of prepared sizes all-rail from Districts 4, 7, and 8 to Market Area 21 equally applicable for shipment as lake cargo, both types of shipment to be subject to the same seasonal discounts; to wit, the maximum discount now established for all-rail shipment to be applicable for both methods of shipment from April 1 to July 1, 50 per cent of the maximum discount to be permitted on shipments from July 1 to August 15 and no discount to be applicable for the remainder of the year.

District Board No. 7 has filed a petition to intervene and answer in opposition to the original petition, alleging that the temporary relief requested by the original petitioner would seriously reduce the realization of code members in District No. 7 and that such relief, if any, should be given only by raising the minimum prices of all districts concerned for shipment to the City of Detroit and its environs via lake to equal those for shipment thereto all-rail. District Board No. 4 has also intervened.

An informal conference on the question of temporary relief was held on November 19, 1940. Representatives of Consumers' Counsel Division (herein sometimes referred to as "the petitioner"), of District Boards 2, 4, 7, and 8, and of various retail dealers were present.

At the conference petitioner represented that temporary relief in the form of a reduction in rail prices was necessary in order to permit rail retailers in the Detroit area to compete against dock retailers. It was claimed that under effective minimum prices dock retailers since October 1, 1940, have been able to purchase prepared sizes of coal moving by lake at minimum prices f. o. b. the

mine, which are less than minimum prices for the same coal moving to the same destination all-rail.

District Boards 2, 4, and 8 took no definite position on the matter in issue. District Board 7 took the position that if minimum prices for rail and lake shipments should be equalized, equalization should be accomplished by increasing lake prices rather than reducing rail prices.

It further appears: That petitioner would be content with reductions in prices for low volatile stove and nut coal from Districts 7 and 8 moving by rail and is not pressing its request for temporary relief in respect to other sizes and types of coal; that approximately 200,000 to 300,000 tons of low volatile stove and nut coal have been stored on the docks and that on October 1, 1940, more than 250,000 tons of said sizes of coal were stored in rail retail yards; that the normal winter requirements of said sizes of coal in the metropolitan area of Detroit exceed 1,000,000 tons, and that, therefore, about 500,000 tons or more of said sizes will probably be purchased by retailers during this winter; that the season of lake navigation is practically over and that the likelihood of any substantial movement of coal by lake from now until January 1, 1941, is remote; that to grant the reductions requested by petitioner would probably reduce the realization to code members producing low volatile coal in Districts 7 and 8 by 50 cents a ton on stove coal, and 25 cents a ton on nut coal, on a very considerable tonnage and hence further lower the realization of Minimum Price Area 1 below cost of production.

The Director has carefully considered petitioner's request for temporary relief and the views expressed and data submitted at the informal conference. The Director finds that no adequate showing has been made that any significant amount of low volatile stove and nut coal has been stored on docks in the Detroit area by retailers subsequent to October 1, 1940; that no adequate showing has been made that dock retailers paid less for low volatile stove and nut coal actually stored than the rail retail dealers paid for comparable coal stored in their yards prior to October 1, 1940; that there has been no adequate showing of actual or impending injury to rail retail dealers in Detroit attributable to the effective minimum prices for lake and rail movements; that the granting of this relief would unduly prejudice other interested persons in advance of the hearing set for January 9, 1941; and that no sufficiently clear showing has been made that petitioner, or persons represented by it, are entitled at this time to the temporary relief requested. Temporary relief should be denied.

The permanent relief requested by the petitioner differs substantially from the temporary relief requested by it. The

considerations which underlie the propriety of the granting of permanent relief in this case differ substantially from the considerations which underlie the propriety of the granting of temporary relief. The matter of the permanent order sought by the petitioner is not now considered. A final hearing has been scheduled for January 9, 1941, so that the merits of petitioner's request for a permanent order may be carefully considered, and if an appropriate case is made, relief granted.

It is so ordered.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5566; Filed, December 12, 1940;
11:30 a. m.]

[Docket Nos. A-348, A-93]

PETITION OF BITUMINOUS COAL PRODUCERS BOARD FOR DISTRICT NO. 18 FOR CHANGES IN THE CLASSIFICATIONS AND MINIMUM PRICES FOR COALS PRODUCED AND SOLD IN DISTRICT NO. 18; PETITION OF B. H. KINNEY, FOR MODIFICATION IN THE CLASSIFICATIONS AND MINIMUM PRICES FOR COALS PRODUCED IN THE KINNEY NO. 1 MINE, MINE INDEX NO. 12, SUBDISTRICT NO. 6 OF DISTRICT NO. 18

NOTICE OF AND ORDER FOR HEARING, ORDER OF CONSOLIDATION AND ORDER GRANTING TEMPORARY RELIEF

Petitions, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named parties;

It appearing that the above-entitled matters raise, in part, similar and analogous issues;

It is ordered, That the above-entitled matters be consolidated for the purposes of a hearing thereon and for such other purposes as may be deemed desirable by the Director.

It is further ordered, That the hearing in the above-entitled matters under the applicable provisions of said Act and the rules of the Division be held on January 8, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Charles S. Mitchell or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the

inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 3, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of interveners or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith as to Docket No. A-348, is in regard to modifications of the Effective Minimum Prices in Size Groups Nos. 2, 6, 8, 9, 12, 13 and 15 in subdistrict No. 6 of District No. 18, and Size Groups Nos. 2, 8, 9, and 12 in subdistrict No. 7 of District No. 18; in Docket No. A-93 is in regard to modifications and changes in the Classifications of Effective Minimum Prices for coals produced in the Kinney No. 1 Mine of B. H. Minney, Mine Index No. 12, Subdistrict No. 6, District No. 18, with respect to Size Group Nos. 2, 6, 8, 9, 13 and 15.

It is further ordered, That a reasonable showing of the necessity therefor having been made, pending final disposition of the petitions in the above-entitled matters, temporary relief be and it hereby is granted as follows: commencing forthwith the following changes shall be made in Price Schedule No. 1 for District No. 18:

Prices listed for Subdistrict No. 6—Carthage—shall be deleted and the following prices inserted in lieu thereof:

Size groups							
2	6	8	9	10	12	13	15
400	350	300	215	215	170	150	350

Prices listed for Subdistrict No. 7—Hagan—shall be deleted and the follow-

ing prices inserted in lieu thereof:

Size groups					
2	8	9	11	12	13
400	300	215	190	170	125

The foregoing changes in Effective Minimum Prices are to be read in the light of the instructions, exceptions and other provisions contained in Price Schedule No. 1 for District No. 18 and Supplements thereto.

Notice is hereby given that applications to stay, terminate or modify the order of consolidation or the temporary relief herein granted may be filed pursuant to the Rules and Regulations Governing Practice and Procedure before the Bituminous Coal Division and Proceedings Instituted pursuant to section 4 II (d) of the Bituminous Coal Act of 1937.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5568; Filed, December 12, 1940;
11:31 a. m.]

[Docket No. A-367]

PETITION OF THE WHEELING TOWNSHIP COAL MINING COMPANY FOR A REVISION OF CLASSIFICATIONS AND PRICES OF COALS SOLD FOR INDUSTRIAL STEAM USE IN SIZE GROUPS 5-7 IN MARKET AREAS 4, 5, 7, 9-22, 98 AND 99, AND SOLD IN SIZE GROUPS 1-8 FOR EXPORT TO CANADIAN RAILROADS IN MARKET AREAS 4, 21, 98 AND 99

MEMORANDUM OPINION AND ORDER CONCERNING PRAYER FOR TEMPORARY RELIEF

The above named petitioner, a code member in District 4, has filed a petition requesting reclassifications of its coal in Size Groups 5, 6, and 7, the projection of such reclassifications to the schedule of prices for railroad fuel sold to the Canadian National Railways, Canadian Pacific Railroad and the Temiskaming and Northern Ontario Railroad, a reduction of 18 cents in the level of prices now effective for lake cargo shipments of railroad fuel to the foregoing railroads from District 4 code members, and the equalization on that reduced level of prices applicable for shipments to such railroads via lake and via all-rail. The petitioner also contends that the establishment of any minimum prices for District 4 coals when sold for export to Canada for any use is not validly authorized by the Bituminous Coal Act of 1937.

The petition contains a request for temporary relief and an informal conference was held on November 22, 1940, after notice to interested persons. Petitioner agreed at the informal conference to submit certain sales and distribution data for the record of the conference. This data was received on December 5,

1940. At the conference all interested persons were given full opportunity to express their views concerning the temporary relief prayed. Representatives of petitioner, Rochester and Pittsburgh Coal Company, Industrial Coal and Iron Company, District Boards Nos. 1, 2, 3, 4, and 8, and Consumers' Counsel appeared at the conference.

Petitioner does not press the questions concerning the validity of the establishment of prices for coal export to Canada or the reduction of the level of railroad fuel prices for all code members in District 4 on its prayer for temporary relief. Petitioner asks, instead, that temporary relief be granted only for its coals and only for sale to the Canadian National Railways and the Canadian Pacific Railroad, the lower prices requested to apply only to a monthly tonnage not in excess of the average monthly tonnage of sales made by petitioner to said railroads during the first nine months of 1940, namely 52,000 tons per month. Likewise, petitioner asks that temporary relief with respect to shipments for commercial use be limited to an amount of coal not to exceed the respective average monthly tonnages sold by petitioner in the specified market areas during the first nine months of 1940. At the informal conference, the representatives of petitioner expressed a willingness to segregate the requested relief in any manner which might facilitate presentation or disposition. District Board No. 4 opposed the granting of any temporary relief. Rochester and Pittsburgh Coal Company (a code member in District 1) and District Board No. 3 opposed the granting of temporary relief in regard to railroad fuel prices.

Petitioner represented at the conference that 50 per cent of its business (including virtually all of a substantial business with the specified Canadian railroads) had been lost since the effective date of minimum prices. It ascribed the loss of commercial business to the improper classification of its coals in Size Groups 5, 6, and 7, as compared to other coals produced in the Ohio No. 8 seam and sold in competition. It contended that the railroad fuel business was curtailed not only because of such allegedly improper classification but also because the price level for such coals was too high.

The reclassifications sought by petitioner are based upon the asserted deficiency in B. t. u. content of its coals in Size Groups 5, 6 and 7 as compared with the average of the Ohio No. 8 base O coals in District 4. This deficiency is attributed in part to the mechanization of petitioner's mine. Wheeling Township's coals are now classified O in all size groups. Petitioner asks that the classification in Size Group 5 be changed to Q, in Size Group 6, to R, and in Size Group 7, to P—a reduction in price of 10 cents, 15 cents, and 5 cents, respectively. However, although petitioner's manager stated that the Wheeling Township coals had been

customarily sold in the past at differentials below other Ohio No. 8 coals, it appears from further statements which he made at the conference that the B. t. u. inferiority of its coals has not in all cases been reflected in actual prices to the extent or in the same manner as petitioner now requests it be reflected. In such circumstances, although a reasonable showing of the necessity for some temporary relief in order to enable petitioner to recover lost business and to prevent further loss has been made, it does not appear that reclassification of petitioner's coals to the extent requested is necessary or warranted to achieve that end. The Wheeling Township coals, pending final disposition of the petition in the above entitled matter, should be reclassified as follows:

Size Group 5, from O to P—reduced 5 cents per ton.

Size Group 6, from O to Q—reduced 10 cents per ton.

Size Group 7, from O to P—reduced 5 cents per ton.

Said reclassifications shall be applicable only for shipments for industrial steam use to the particular consumers and destinations in Market Areas 4, 5, 7, 9-22, 98, and 99 to which petitioner shipped its coals in Size Groups 5, 6, and 7 from January 1 to September 30, 1940: *Provided, however,* That none of such shipments shall exceed in tonnage per month the average monthly tonnage shipped to each said particular consumer during said period; and, provided that within 10 days after the date of this order the petitioner shall supply the Division with a list of all consumers to whom it sold coal in Size Groups 5, 6 and 7 during the first nine months of 1940, showing the tonnage in each Size Group sold to each consumer in each of the nine months and the particular destination; and, further, provided that petitioner shall furnish to the Division on the 15th day of each month a report of the amounts of all shipments of coals in Size Groups 5, 6, and 7 made during the preceding month, the consumers purchasing such coals, and the prices paid therefor.

The request of intervenor Industrial Coal and Iron Company that the relationship between its coals and those of Wheeling Township be maintained in the event of any change in the latter's classifications cannot now be granted in view of the absence of a full and proper showing of the necessity therefor.

The prayer for temporary relief respecting shipments by petitioner to the Canadian railroads for railroad fuel use is founded upon the contention that Canadian railroads buy coal upon a B. t. u. basis and the assertion that the level of prices for petitioner's coals for such movement encourages the railroads to operate captive mines.

This problem is extremely complicated. It involves the purchasing practices of Canadian railroads as compared with those of American roads, as well as the

basic problems of price levels and coordination as between districts. In these circumstances, and in view of the fact that data pertaining to this matter submitted by petitioner has been only recently received, and decision as to that prayer for temporary relief should await more thorough consideration. The slight delay which may be involved will not result in any undue injury to petitioner and will prevent any injury to other persons which might arise from a decision arrived at hastily. It should be noted that, at any time prior to final disposition of this matter, the Director has the authority to grant or deny temporary relief in whole or in part.

Since petitioner has agreed to the segregation of the issues presented by its petition the temporary reclassifications set out above have been granted at this time in order that petitioner may be placed at a minimum of disadvantage commensurate with a proper treatment of the entire matter.

Notice is hereby given that applications to stay, terminate, or modify the preliminary or temporary relief granted in this order may be filed pursuant to the Rules and Regulations Governing Practice and Procedure under section 4 II (d) of the Bituminous Coal Act of 1937.

Accordingly, it is so ordered.

Dated: December 10, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5567; Filed, December 12, 1940;
11:31 a. m.]

[Docket No. A-376]

DISTRICT BOARD NO. 7 FOR THE ESTABLISHMENT OF PRICE CLASSIFICATIONS AND MINIMUM PRICES FOR THE COALS OF CERTAIN MINES NOT HERETOFORE CLASSIFIED AND PRICED

NOTICE OF AND ORDER FOR HEARING AND ORDER GRANTING TEMPORARY RELIEF

A petition, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named party;

It is ordered, That a hearing in the above-entitled matter under the applicable provisions of said Act and the rules of the Division be held on January 22, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Travis Williams or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, ex-

amine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 17, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of interveners or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith is in regard to the establishment of effective minimum prices for the coals of certain mines, hereinafter referred to, located in District No. 7, for which coals price classifications and minimum prices have not heretofore been established.

It is further ordered, That a reasonable showing of the necessity therefor having been made, pending final disposition of the petition in the above-entitled matter, temporary relief be, and it hereby is, granted as follows: commencing forthwith, the coals referred to in the schedule hereto annexed, marked "Temporary Supplement" and made part hereof, shall be subject to minimum prices as provided therein.

Notice is hereby given that applications to stay, terminate or modify the temporary relief herein granted may be filed pursuant to the rules and regulations governing practice and procedure before the Bituminous Coal Division in proceedings instituted pursuant to Section 4 II (d) of the Bituminous Coal Act of 1937.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5563; Filed, December 12, 1940;
11:29 a. m.]

[Docket No. A-382]

PETITION OF DISTRICT BOARD 8 FOR THE ESTABLISHMENT OF PRICE CLASSIFICATIONS AND MINIMUM PRICES FOR THE COALS OF CERTAIN MINES IN DISTRICT NO. 8 NOT HERETOFORE CLASSIFIED AND PRICED

NOTICE OF AND ORDER FOR HEARING AND ORDER GRANTING TEMPORARY RELIEF

An original petition, pursuant to section 4 II (d) of the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named party;

It is ordered, That a hearing in the above-entitled matter be held, under the applicable provisions of said Act, and the rules and regulations of the Division, on January 7, 1941, at 10 o'clock a. m. (eastern standard time) in a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in Room 502 will advise as to the room in which such hearing will be held.

It is further ordered, That Thurlow G. Lewis or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become parties herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 1, 1941.

The matter concerned herewith is in regard to the establishment of price classifications and minimum prices for the coals of certain mines hereinafter named, located in District No. 8, for which coals price classifications and minimum prices have not heretofore been established.

All persons are hereby notified that the hearing in the above-entitled mat-

ter and any orders therein may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment of the original petition, petitions of interveners, or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of said original petition.

It is further ordered, That a reasonable showing of the necessity therefor having been made, pending final disposition of the petition in the above-entitled matter, temporary relief be, and it hereby is, granted as follows: Commencing forthwith, the coals referred to in the schedules marked "Temporary Supplement R, Schedule of Effective Minimum Prices for District No. 8. 'For All Shipments Except Truck'" and "Temporary Supplement T, Schedule of Effective Minimum Prices for District No. 8. For Truck Shipments", annexed hereto and made part hereof, shall be subject to minimum prices as provided in said schedules.

Notice is hereby given that applications to stay, terminate or modify the temporary relief herein granted may be filed pursuant to the rules and regulations governing practice and procedure before the Bituminous Coal Division and proceedings instituted pursuant to section 4 II (d) of the Bituminous Coal Act of 1937.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5569; Filed, December 12, 1940;
11:32 a.m.]

[Docket No. A-398]

PETITION OF DISTRICT BOARD NO. 2 FOR THE ESTABLISHMENT OF PRICE CLASSIFICATIONS AND MINIMUM PRICES FOR THE COALS OF CERTAIN MINES NOT HERETOFORE CLASSIFIED AND PRICED

NOTICE OF AND ORDER FOR HEARING AND ORDER GRANTING TEMPORARY RELIEF

A petition, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named party;

It is ordered, That a hearing in the above-entitled matter under the applicable provisions of said Act and the rules of the Division be held on January 22, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Travis Williams or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to

preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 17, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of interveners or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith is in regard to the establishment of effective minimum prices for the coals of certain mines, hereinafter named, located in District No. 2, for which coals price classifications and minimum prices have not heretofore been established.

It is further ordered, That a reasonable showing of the necessity therefor having been made, pending final disposition of the petition in the above-entitled matter, temporary relief be, and it hereby is, granted as follows: Commencing forthwith the coals referred to in the Temporary Supplements annexed hereto and made part hereof shall be subject to minimum prices as provided therein.

Notice is hereby given that applications to stay, terminate or modify the temporary relief herein granted may be filed pursuant to the rules and regulations governing practice and procedure before the Bituminous Coal Division in proceedings instituted pursuant to section 4 II (d) of the Bituminous Coal Act of 1937.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5562; Filed, December 12, 1940;
11:29 a. m.]

[Docket No. A-423]

PETITION OF CARRS FORK COAL COMPANY, A PRODUCER IN DISTRICT NO. 8, ON BEHALF OF SEARLES BROTHERS, TOLEDO, OHIO, A CONSUMER WHO REGULARLY BUYS AND RECEIVES COAL IN CARLOAD QUANTITIES BUT WHO DOES NOT HAVE PHYSICAL RAILWAY OR WATERWAY CONNECTIONS FOR RECEIVING COAL, FOR THE RIGHT TO PURCHASE SUCH COAL AT THE INDUSTRIAL PRICE

NOTICE OF AND ORDER FOR HEARING

A petition, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named party;

It is ordered, That a hearing in the above-entitled matter under the applicable provisions of said Act and the rules of the Division be held on January 16, 1941, at ten o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Edward J. Hayes or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 11, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of

interveners or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith is in regard to a petition of Carrs Fork Coal Company, a producer in District No. 8, on behalf of Searles Brothers, Toledo, Ohio, a consumer who regularly buys and receives coal in carload quantities but who does not have physical railway or waterway connections for receiving coal, for the right to purchase such coal at the industrial price.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5560; Filed, December 12, 1940;
11:28 a. m.]

[Docket No. A-435]

PETITION OF BATON COAL COMPANY FOR CHANGES IN MINIMUM PRICES OF COALS OF ITS WILPEN MINE, DISTRICT No. 2, WHEN SHIPPED FOR RAILROAD FUEL USE TO CANADIAN NATIONAL RAILROAD

NOTICE OF AND ORDER FOR HEARING

A petition, pursuant to the Bituminous Coal Act of 1937, having been duly filed with this Division by the above-named party;

It is ordered, That a hearing in the above-entitled matter under the applicable provisions of said Act and the rules of the Division be held on January 17, 1941, at 10 o'clock in the forenoon of that day, at a hearing room of the Bituminous Coal Division, 734 Fifteenth Street NW., Washington, D. C. On such day the Chief of the Records Section in room 502 will advise as to the room where such hearing will be held.

It is further ordered, That Edward J. Hayes or any other officer or officers of the Division duly designated for that purpose shall preside at the hearing in such matter. The officers so designated to preside at such hearing are hereby authorized to conduct said hearing, to administer oaths and affirmations, examine witnesses, subpoena witnesses, compel their attendance, take evidence, require the production of any books, papers, correspondence, memoranda, or other records deemed relevant or material to the inquiry, to continue said hearing from time to time, and to prepare and submit to the Director proposed findings of fact and conclusions and the recommendation of an appropriate order in the premises, and to perform all other duties in connection therewith authorized by law.

Notice of such hearing is hereby given to all parties herein and to persons or entities having an interest in these proceedings and eligible to become a party herein. Any person desiring to be admitted as a party to this proceeding may file a petition of intervention in accordance with the rules and regulations of the

Bituminous Coal Division for proceedings instituted pursuant to section 4 II (d) of the Act, setting forth the facts on the basis of which the relief in the original petition is supported or opposed or on the basis of which other relief is sought. Such petitions of intervention shall be filed with the Bituminous Coal Division on or before January 11, 1941.

All persons are hereby notified that the hearing in the above-entitled matter and any orders entered therein, may concern, in addition to the matters specifically alleged in the petition, other matters necessarily incidental and related thereto, which may be raised by amendment to the petition, petitions of interveners or otherwise, or which may be necessary corollaries to the relief, if any, granted on the basis of this petition.

The matter concerned herewith is in regard to petitioner's request for a price reduction of 15 cents per ton on coal from its Wilpen Mine in Size Groups 1-5 and Size Group 6 when shipped for railroad fuel use to the Canadian National Railroad, in order to offset an alleged 15 cent freight rate advantage of petitioner's competitors in District No. 1.

Dated: December 11, 1940.

[SEAL]

H. A. GRAY,
Director.

[F. R. Doc. 40-5570; Filed, December 12, 1940;
11:32 a. m.]

Bureau of Reclamation.

YUMA PROJECT, ARIZONA-CALIFORNIA

CHANGE OF WITHDRAWAL FORM OF RECLAMATION WITHDRAWAL FROM SECOND TO FIRST FORM

NOVEMBER 8, 1940.

The SECRETARY OF THE INTERIOR.

Sir: It is recommended that the form of withdrawal of the following described lands, which were withdrawn under the second form by Departmental Orders of July 2 and August 26, 1902, be changed from the second form to the first form, in accordance with the provisions of Section 3 of the Reclamation Act of June 17, 1902 (32 Stat., 388).

YUMA PROJECT, ARIZONA-CALIFORNIA

San Bernardino Meridian, California

T. 15 S., R. 22 E.,

Sec. 36, S $\frac{1}{2}$;

T. 16 S., R. 22 E.,

Sec. 1, N $\frac{1}{2}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ N $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$
NE $\frac{1}{4}$ SE $\frac{1}{4}$;

Sec. 2, E $\frac{1}{2}$ and SW $\frac{1}{4}$.

Respectfully,

JOHN C. PAGE,
Commissioner.

I concur November 22, 1940.

FRED W. JOHNSON,
Commissioner of the
General Land Office.

Approved and the change as recommended is hereby ordered. The Commissioner of the General Land Office will

cause the records of his office and the local land office to be noted accordingly.

E. K. BURLEW,
First Assistant Secretary.

DECEMBER 4, 1940.

[F. R. Doc. 40-5543; Filed, December 12, 1940;
9:47 a. m.]

YUMA PROJECT, ARIZONA-CALIFORNIA

FIRST FORM RECLAMATION WITHDRAWAL

NOVEMBER 18, 1940.

The SECRETARY OF THE INTERIOR.

Sir: In connection with the authority vested in you by the Act of June 28, 1934 (48 Stat., 1269) as amended, it is recommended that the following described lands be withdrawn from public entry under the first form withdrawal as provided in Section 3, Act of June 17, 1902 (32 Stat., 388).

YUMA PROJECT, ARIZONA-CALIFORNIA

San Bernardino Meridian, California

T. 15 S., R. 22 E.,

Sec. 25, all

Sec. 26, all

Sec. 27, all

T. 16 S., R. 22 E.,

Sec. 2, NW $\frac{1}{4}$

Respectfully,

JOHN C. PAGE,
Commissioner.

I concur November 22, 1940.

FRED W. JOHNSON,
Commissioner of the General
Land Office.

The foregoing recommendation is hereby approved and the Commissioner of the General Land Office will cause the records of his office and the local land office to be noted accordingly.

E. K. BURLEW,
First Assistant Secretary.

DECEMBER 4, 1940.

[F. R. Doc. 40-5542; Filed, December 12, 1940;
9:46 a. m.]

General Land Office.

STOCK DRIVEWAY WITHDRAWAL No. 226,
IDAHO No. 16, REDUCED

Departmental order of August 5, 1931, establishing Stock Driveway Withdrawal No. 226, Idaho No. 16, under section 10 of the act of December 29, 1916, 39 Stat. 862, as amended by the act of January 29, 1929, 45 Stat. 1144, subject to existing power site withdrawals, is hereby revoked so far as its affects the following-described land:

Boise Meridian

T. 30 N., R. 3 W.,

Sec. 32, lots 5 and 8, 54.32 acres.

OSCAR L. CHAPMAN,
Assistant Secretary
of the Interior.

DECEMBER 2, 1940.

[F. R. Doc. 40-5538; Filed, December 12, 1940;
9:44 a. m.]

**STOCK DRIVEWAY WITHDRAWAL No. 161,
CALIFORNIA No. 11, REDUCED**

DECEMBER 3, 1940.

Departmental order of October 30, 1922, withdrawing certain lands in California for stock driveway purposes under section 10 of the act of December 29, 1916, 39 Stat. 862, as amended by the act of January 29, 1929, 45 Stat. 1144, is hereby revoked so far as it affects the following-described land:

Mt. Diablo Meridian

T. 33 N., R. 2 W.,
Sec. 22, E½ and E½ W½, 480 acres.

OSCAR L. CHAPMAN,
Assistant Secretary of the Interior.

[F. R. Doc. 40-5540; Filed, December 12, 1940;
9:45 a. m.]

**STOCK DRIVEWAY WITHDRAWALS NOS. 69
AND 84, NEVADA NOS. 15 AND 24, REDUCED**

DECEMBER 3, 1940.

Departmental orders of February 19, and June 9, 1919, withdrawing certain lands in Nevada for stock driveway purposes under section 10 of the act of December 29, 1916, 39 Stat. 862, as amended by the act of January 29, 1929, 45 Stat. 1144, are hereby revoked so far as they affect the following-described lands:

Mt. Diablo Meridian

T. 1 N., R. 53 E.,
W½ sec. 2, secs. 3 and 10, W½ sec. 11, secs.
15, 22, 27, and 34;

T. 2 N., R. 53 E.,
Secs. 3, 10, 15, 22, 27, and 34, W½ sec. 35;

T. 1 S., R. 53 E.,
Secs. 3, 10, 15, 21, 22, 28, and 33;

T. 1 S., R. 54 E.,
Sec. 25, E½, SW¼ sec. 26, sec. 35, NW¼
sec. 36;

T. 2 S., R. 54 E.,
Secs. 2, 11, 14, 15, 21, 22, 28, 29, and 32;

T. 1 S., R. 55 E.,
Secs. 2, 11, 14, and 15, E½ sec. 20.
Secs. 21 and 22, W½ sec. 28,
Secs. 29 and 30;

aggregating 26,545.36 acres.

OSCAR L. CHAPMAN,
Assistant Secretary of the Interior.

[F. R. Doc. 40-5539; Filed, December 12, 1940;
9:44 a. m.]

National Park Service.

**ORDER EXCLUDING THE GREAT ONYX CAVE
AND THE CRYSTAL CAVE FROM THE
MAXIMUM BOUNDARIES OF THE MAM-
MOTH CAVE NATIONAL PARK, KENTUCKY**

Pursuant to the authority contained in section 2 of the Act of Congress approved August 28, 1937 (50 Stat. 871), I, Harold L. Ickes, Secretary of the Interior, do hereby exclude the Great Onyx Cave and the Crystal Cave from the maximum boundaries of the Mammoth Cave National Park as authorized by the Act of May 25, 1926 (44 Stat. 635), and the area required for general development of the said park by section 1 of the Act of May 14, 1934 (48 Stat. 775), is modified accordingly.

In witness whereof I have hereunto set my hand and caused the official seal of the Department of the Interior to be affixed in the City of Washington, this 3d day of December 1940.

[SEAL]

HAROLD L. ICKES,
Secretary of the Interior.

[F. R. Doc. 40-5544; Filed, December 12, 1940;
9:47 a. m.]

DEPARTMENT OF AGRICULTURE.

Surplus Marketing Administration.

[Docket A-152 O-152]

**NOTICE OF HEARING WITH RESPECT TO A
PROPOSAL TO AMEND ORDER NO. 30, AS
AMENDED, AND THE TENTATIVELY AP-
PROVED MARKETING AGREEMENT, AS
AMENDED, REGULATING THE HANDLING OF
MILK IN THE TOLEDO, OHIO, MARKETING
AREA**

Whereas pursuant to the powers conferred upon the Secretary of Agriculture by Public Act No. 10, 73d Congress, as amended and as reenacted and amended by the Agricultural Marketing Agreement Act of 1937, the Acting Secretary issued Order No. 30 regulating the handling of milk in the Toledo, Ohio, marketing area, effective September 16, 1938, which order was amended effective May 1, 1940;¹ and

Whereas the Secretary, on March 29, 1940, tentatively approved a marketing agreement, as amended, regulating the handling of milk in the Toledo, Ohio, marketing area; and

Whereas the Northwestern Cooperative Sales Association, Inc., has proposed certain amendments to said Order No. 30, as amended, and said tentatively approved marketing agreement, as amended; and

Whereas, the Secretary has reason to believe that the declared policy of the act will be effectuated by holding a hearing on a proposal to amend Order No. 30, as amended, and said tentatively approved marketing agreement, as amended; and

Whereas under the aforesaid act, notice of hearing is required in connection with a proposal to amend an order, and the General Regulations, Series A, No. 1, as amended, of the Agricultural Adjustment Administration, United States Department of Agriculture, provide for notice of and opportunity for hearing upon amendments to marketing agreements and orders:

Now, therefore, pursuant to said act and general regulations, notice is hereby given of a hearing to be held on a proposal to amend Order No. 30, as amended, and the tentatively approved marketing agreement, as amended, regulating the handling of milk in the Toledo, Ohio, marketing area, beginning at 10:00 a. m., e. s. t., December 17, 1940, in the Hotel Waldorf, 310 Summit Street, Toledo, Ohio.

¹ 5 F. R. 1571.

This public hearing is for the purpose of receiving evidence relative to proposals by the said Northwestern Cooperative Sales Association to (1) revise the "market-share" or "base-rating" plan of payment to producers, and (2) revise the method of determining uniform prices to producers.

Copies of said proposal, prepared as a basis for the public hearing, may be obtained from the Hearing Clerk, Office of the Solicitor, United States Department of Agriculture, in Room 0310 South Building, Washington, D. C., or may be there inspected.

[SEAL]

CLAUDE R. WICKARD,
Secretary of Agriculture.

DECEMBER 12, 1940.

[F. R. Doc. 40-5571; Filed, December 12, 1940;
11:38 a. m.]

DEPARTMENT OF LABOR.

Wage and Hour Division.

**NOTICE OF ISSUANCE OF SPECIAL CERTI-
FICATES FOR THE EMPLOYMENT OF LEARN-
ERS UNDER THE FAIR LABOR STANDARDS
ACT OF 1938**

Notice is hereby given that Special Certificates authorizing the employment of learners at hourly wages lower than the minimum wage rate applicable under Section 6 of the Act are issued under Section 14 thereof, Part 522 of the Regulations issued thereunder (August 16, 1940, 5 F. R. 2862) and the Determination and Order or Regulation listed below and published in the FEDERAL REGISTER as here stated.

Apparel Learner Regulations, September 7, 1940, (5 F. R. 3591).

Artificial Flowers and Feathers Learner Regulations, October 24, 1940, (5 F. R. 4203).

Glove Findings and Determination of February 20, 1940, as amended by Administrative Order of September 20, 1940, (5 F. R. 3748).

Hosiery Learner Regulations, September 4, 1940, (5 F. R. 3530).

Independent Telephone Learner Regulations, September 27, 1940, (5 F. R. 3829).

Knitted Wear Learner Regulations, October 10, 1940, (5 F. R. 3982).

Millinery Learner Regulations, Custom Made and Popular Priced, August 29, 1940, (5 F. R. 3392, 3393).

Textile Determination and Order, November 8, 1939, (4 F. R. 4531), as amended, April 27, 1940, (5 F. R. 1586).

Woolen Learner Regulations, October 30, 1940, (5 F. R. 4302).

The employment of learners under these Certificates is limited to the terms and conditions as to the occupations, learning periods, minimum wage rates, et cetera, specified in the Determination and Order or Regulation for the industry designated above and indicated opposite the employer's name. These Certificates

become effective December 12, 1940. The Certificates may be cancelled in the manner provided in the Regulations and as indicated in the Certificate. Any person aggrieved by the issuance of any of these Certificates may seek a review or reconsideration thereof.

NAME AND ADDRESS OF FIRM, INDUSTRY, PRODUCT, NUMBER OF LEARNERS, AND EXPIRATION DATE

Beauti-Stay Foundations Company, 70 Piedmont Street, Worcester, Massachusetts; Apparel; Corsets, Girdles, Brassieres; 1 learner (75% of the applicable hourly minimum wage); December 12, 1941.

H. W. Coombs Company, 11 Spalding Street, Everett, Massachusetts; Apparel; Blouses and Underwear; 3 learners (75% of the applicable hourly minimum wage); December 12, 1941.

Dainty Frock Company, 618 Cherry Street, Philadelphia, Pennsylvania; Apparel; Dresses and Blouses; 5 learners (75% of the applicable hourly minimum wage); December 12, 1941.

Broom and Newman, Carteret, New Jersey; Apparel; Pajamas and Shirts; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

Dorothy Mfg. Company, 36 Frances Place, Keansburg, New Jersey; Apparel; Infant's & Children's Wear; 5 learners (75% of the applicable hourly minimum wage); December 12, 1941.

Hirsch Shirt Corporation, Calumet & Hoffman Streets, Hammond, Indiana; Apparel; Men's Shirts; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

Kearns Brothers, Inc., First and South Streets, Pinckneyville, Illinois; Apparel; Wash Frocks; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

Majestic Manufacturing Company, Inc., 192 Cain Street, N. W., Atlanta, Georgia; Apparel; Wash Dresses; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

N & W Overall Company, Inc., 1417 Kemper Street, Lynchburg, Virginia; Apparel; Cotton Pants & Shirts, Overalls & Overall Coats, Pants other than 100% Cotton; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

A. Di Paola & Company, 211 South Fifth Street, Camden, New Jersey; Apparel; Overcoats, Sackcoats; 5 percent (75% of the applicable hourly minimum wage); December 12, 1941.

Charles Porder Manufacturing Company, 217 Jackson Street, Lowell, Massachusetts; Apparel; Ladies' & Misses' Wash Dresses; 5 learners (75% of the applicable hourly minimum wage); December 12, 1941.

Practical Frocks, Inc., 1004 Elizabeth Avenue, Elizabeth, New Jersey; Apparel; Cotton Housecoats & Cotton Dresses; 5

learners (75% of the applicable hourly minimum wage); December 12, 1941.

Mary Emma Manufacturing Company, 72 Second Avenue, Kingston, Pennsylvania; Apparel; Dresses — Aprons; 3 learners (75% of the applicable hourly minimum wage); December 12, 1941.

Julius Kayser & Company, 453 DeKalb Avenue, Brooklyn, New York; Glove; Knit Fabric; 5 percent; December 12, 1941.

Picardy Mills, Inc., 3611 14th Avenue, Brooklyn, New York; Glove; Knit Fabric; 5 percent; December 12, 1941.

Picardy Mills, Inc., 2618 Avenue U, Brooklyn, New York; Glove; Knit Fabric; 5 percent; December 12, 1941.

Picardy Mills, Inc., Freeport, Long Island; Glove; Knit Fabric; 2 learners; December 12, 1941.

Picardy Mills, Inc., 113 University Place, New York, New York; Glove; Knit Fabric; 8 learners; June 12, 1941.

Eagle Glove & Garment Company, 215 North Franklin Street, Muncie, Indiana; Glove; Work Glove; 5 learners; December 12, 1941.

Newton Glove Manufacturing Company, Ashe Avenue, Newton, North Carolina; Glove; Work Glove; 5 percent; December 12, 1941.

Artcraft Silk Hosiery Mills, Inc., Philadelphia, Pennsylvania; Hosiery; Full Fashioned; 5 percent; December 12, 1941.

Hattiesburg Hosiery Company, Hattiesburg, Mississippi; Hosiery; Full Fashioned; 5 percent; December 12, 1941.

West Grove Hosiery Mills, West Grove, Pennsylvania; Hosiery; Full Fashioned; 5 learners; December 12, 1941.

West Grove Hosiery Mills, West Grove, Pennsylvania; Hosiery; Full Fashioned; 15 learners; August 12, 1941.

A. W. Wheeler and Son, Inc., Brevard, North Carolina; Hosiery; Full Fashioned; 5 learners; August 12, 1941.

Wei-Sack Mills, Inc., South Front Street, Hudson, New York; Knitted Wear; Sweaters; 5 learners; December 12, 1941.

Adler Manufacturing Company, 19 Townsend Street, Port Chester, New York; Millinery; Popular-Priced; 5 learners; June 12, 1941.

Fairmount Chenille Company, Inc., Fairmount, Georgia; Textile; Cotton Chenille Bedspreads, Mats, Etc.; 5 learners; December 12, 1941.

Georgia Webbing & Tape Company, 1117 Appler Street, Columbus, Georgia; Textile; Cotton and Jute Webbing & Tape; 3 learners; December 12, 1941.

NOTE: Special Certificates issued, in the FEDERAL REGISTER of December 9, 1940, to Lincolnsfield Mills, West Broadway, Lincoln, Missouri should read Lincoln, Maine.

Signed at Washington, D. C., this 12th day of December 1940.

GUSTAV PECK,
Authorized Representative
of the Administrator.

[F. R. Doc. 40-5530; Filed, December 11, 1940; 3:21 p. m.]

INTERSTATE COMMERCE COMMISSION

[No. 28496]

PROPORTIONAL RATES OF COMMON CARRIERS AND MINIMUM CHARGES OF CONTRACT CARRIERS

DECEMBER 11, 1940.

The attached order of December 2, 1940,¹ in the above-entitled proceeding, is designed to direct initial consideration along certain lines, as indicated therein. The rates at which this order is directed do not purport to include all of the rates and charges comprehended by the proceeding. Other phases of the investigation will be taken up in due course.

If hearings are ordered in response to requests made pursuant to the proviso in the order, it is the present plan to commence same some time in March, 1941. Parties requesting hearing should include in their requests their best estimates of the time which will be consumed in presenting the evidence which they intend to offer.

[SEAL]

W. P. BARTEL,
Secretary.

[F. R. Doc. 40-5527; Filed, December 11, 1940; 11:41 a. m.]

[No. 28496]

ORDER RELATING TO PROPORTIONAL RATES OF COMMON CARRIERS AND MINIMUM CHARGES OF CONTRACT CARRIERS

At a General Session of the Interstate Commerce Commission, held at its office in Washington, D. C., on the 2d day of December, A. D. 1940.

The Commission having under consideration the rates and charges under investigation in the above-entitled proceeding; and having in mind the decisions in *Chicago and Wisconsin Points Proportional Rates*, 10 M. C. C. 556 and 17 M. C. C. 573; and being of opinion that the rates maintained by all common carrier respondents to this proceeding as described in the next succeeding paragraph, are unlawful to the extent that they are required thereby to be canceled or modified, in violation of the Interstate Commerce Act and particularly of section 2 of Part I and section 216 (d) of Part II thereof:

It is ordered, That in all instances where (1) the common carrier respondents to this proceeding, or any of them, maintain a single- or joint-line interstate rate from one point, which will be designated A, to another point which will be designated B, which rate will apply on a movement by motor vehicle, or as a less-than-carload, of a certain commodity or commodities, shipped from A to B as a separate, complete, and independent transaction, and which, for convenience, will be referred to herein as a local rate;

¹ See next document.

and where (2) the same respondent or respondents concurrently maintain another rate from A to B on the same commodity or commodities in the same unit of shipment, which rate is lower than the local rate, as described, and is limited in its application to instances where the movement from A to B is an integral part of a through interstate movement to or from some third point, which rate, for convenience, will be referred to herein as a proportional rate; and where (3) a proportional rate as described, either by specific provision or by failure specifically to limit its application, is, or purports to be, applicable from A to B on a movement by motor vehicle or as a less-than-carload of the same commodity or commodities, which have been transported to A or are to be transported beyond B by a rail, motor, or water carrier in a unit of shipment larger than that in which they are transported from A to B; the common carrier respondents to this proceeding be, and they are hereby, required on or before February 28, 1941, upon notice to the Commission and to the general public by not less than 30 days' filing and posting in the manner required by law, to cancel their proportional rates as described in the preceding clause numbered (2) which are applied as described in the preceding clause numbered (3), or, in the alternative, to restrict the application of the proportional rates as described in the clause numbered (2) in such manner as specifically to limit their application to portions of the hauls of through interstate shipments, the movement of which is in the same unit of shipment from the initial points of origin to the ultimate destinations of such through shipments: *Provided*, That any interested party may, on or before January 10, 1941, request a hearing upon the lawfulness of any rate or rates affected by this order, specifying the rate or rates covered by such request by tariff, page, and item numbers and the commodity or commodities to which and the points between which such rates apply, in which case consideration will be given to holding a hearing with respect to the rates covered by such requests, and as to such rates the effective date of this order will be postponed until such hearing as is ordered is completed and a decision reached thereon. As to rates affected by this order upon which a hearing is not requested on or before January 10, 1941, the order shall become effective on the date specified.

By the Commission.

[SEAL]

W. P. BARTEL,
Secretary.

[F. R. Doc. 40-5528; Filed, December 11, 1940;
11:41 a. m.]

No. 242—14

SECURITIES AND EXCHANGE COMMISSION.

[File No. 1-1622]

IN THE MATTER OF CARNEGIE METALS COMPANY COMMON STOCK, PAR VALUE \$1

ORDER SETTING HEARING ON APPLICATION TO STRIKE FROM LISTING AND REGISTRATION

At a regular session of the Securities and Exchange Commission held at its office in the City of Washington, D. C., on the 11th day of December, A. D. 1940.

The New York Curb Exchange, pursuant to section 12 (d) of the Securities Exchange Act of 1934, as amended, and Rule X-12D2-1 (b) promulgated thereunder, having made application to strike from listing and registration the Common Stock, Par Value \$1, of Carnegie Metals Company; and

The Commission deeming it necessary for the protection of investors that a hearing be held in this matter at which all interested persons be given an opportunity to be heard;

It is ordered, That the matter be set down for hearing at 10 A. M. on Tuesday, January 7, 1941, at the office of the Securities & Exchange Commission, 120 Broadway, New York City, and continue thereafter at such times and places as the Commission or its officer herein designated shall determine, and that general notice thereof be given; and

It is further ordered, That Adrian C. Humphreys, an officer of the Commission, be and he hereby is designated to administer oaths and affirmations, subpoena witnesses, compel their attendance, take evidence, and require the production of any books, papers, correspondence, memoranda or other records deemed relevant or material to the inquiry, and to perform all other duties in connection therewith authorized by law.

By the Commission.

[SEAL]

ORVAL L. DuBOIS,
Recording Secretary.

[F. R. Doc. 40-5545; Filed, December 12, 1940;
11:11 a. m.]

[File No. 32-150]

IN THE MATTER OF NATIONAL GAS & ELECTRIC CORPORATION, PUBLIC GAS & COKE COMPANY, NATIONAL UTILITIES COMPANY OF MICHIGAN, MICHIGAN FUEL AND LIGHT COMPANY

ORDER DENYING APPLICATION

At a regular session of the Securities and Exchange Commission, held at its office in the City of Washington, D. C., on the 10th day of December, A. D. 1940.

National Gas & Electric Corporation, a registered holding company, and its subsidiary, National Utilities Company of Michigan, and Public Gas & Coke Company, a registered holding company, and its subsidiary, Michigan Fuel and Light Company, having filed joint declarations and applications and amendments thereto under sections 6 (b), 7, and 10 of the Public Utility Holding Company Act of 1935, and Rules U-12C-1, U-12D-1, and U-12F-1 promulgated thereunder, relating to the acquisition by National Gas & Electric Corporation of all the outstanding securities of Public Gas & Coke Company and the publicly held securities of Michigan Fuel and Light Company and the merger of Michigan Fuel and Light Company and National Utilities Company of Michigan, and

Dubuque Fire and Marine Insurance Company, National Reserve Insurance Company, American Trust and Savings Bank, Dubuque Securities Company, and C. J. Schrup having intervened in this proceeding, and

West Virginia Gas Corporation having applied for permission to intervene in this proceeding, and

A hearing on said declarations and applications having been held after appropriate notice and the Commission having issued tentative findings of fact and conclusions of law, and exceptions to the tentative findings of fact and conclusions of law of the Commission having been filed and the Commission having heard argument on said exceptions and examined the record in this proceeding and having issued its Findings and Opinion in the matter on November 19, 1940; and

Said Findings and Opinion having provided that the order in this proceeding be withheld for a period of twenty days in order to afford the parties an opportunity to file applications in the District Court for the Western District of Michigan and/or the Circuit Court of Appeals for the Sixth Circuit, requesting a reconsideration of their decisions in the proceeding for the reorganization of Public Gas & Coke Company, and the twenty-day period having expired and the Commission having been advised that no application for reconsideration has been made to either of said Courts;

It is ordered, That the application of West Virginia Gas Corporation for permission to intervene in this proceeding be and it hereby is denied, and

It is further ordered, That the applications, as amended, be and the same hereby are approved and granted and the declarations, as amended, be and the same hereby are permitted to become

effective, subject, however, to the conditions set forth in Rule U-9 (b) (1) and (2) promulgated under the Act and the following condition:

That, except as the Commission may by order, or orders, from time to time, permit, so long as any of the First Mortgage Bonds, 5% Twenty-Five Year, due February 1, 1953, of National Utilities Company of Michigan, are outstanding, National Utilities Company of Michigan shall not, nor shall any successor or successors of National Utilities Company of Michigan, declare or pay any dividends (other than dividends payable solely in shares of its stock) or make any other distribution on any shares of its stock, from its surplus earned after December 31, 1939 unless the net income carried to earned surplus after that date is determined in accordance with sound accounting principles and includes combined provisions for maintenance and retirements or depreciation in an amount at least equal to 15% of gross operating revenues.

By the Commission.

[SEAL] ORVAL L. DuBOIS,
Recording Secretary.

[F. R. Doc. 40-5548; Filed, December 12, 1940;
11:12 a. m.]

[File No. 55-57]

IN THE MATTER OF WEST OHIO GAS COMPANY AND APPLICATIONS OF THE NATIONAL BANK OF LIMA, OHIO, AND JOHN L. CABLE

ORDER

At a regular session of the Securities and Exchange Commission, held at its office in the City of Washington, D. C., on the 10th day of December, A. D. 1940.

Supplemental applications having been filed pursuant to the Commission's Rule U-11F-2, promulgated under section 11 (f) of the Public Utility Holding Company Act of 1935, by The National Bank of Lima, Ohio, Trustee under the mortgage indenture securing the First and Refunding Mortgage Gold Bonds of the West Ohio Gas Company and John L. Cable, attorney for The National Bank of Lima; a public hearing having been held on said applications pursuant to appropriate notice; the trial examiner having filed his report; applicants having waived the right to file briefs and make oral argument before the Commission; and the Commission having considered the record in these matters and having made and filed its Findings and Opinion herein;

It is ordered, That maximum supplementary allowances in addition to the maximum allowances covered by our order of May 11, 1939, to be paid out of the estate of the West Ohio Gas Company for services rendered in connection with the proceedings for reorganization of said West Ohio Gas Company now pending in the District Court of the

United States for the Northern District of Ohio, Western Division, be and they are hereby approved and fixed, as follows:

(1) \$180 to The National Bank of Lima, Ohio, for services to the end of the reorganization proceedings;

(2) \$270 to John L. Cable for services to the end of the reorganization proceedings;

with the understanding that out-of-pocket expenses of both applicants herein can be compensated for within the scope of the \$300 maximum allowance approved by our order of May 11, 1939, covering their combined out-of-pocket expenses, as determined by the Court, from February 27, 1939, to the end of the reorganization proceedings;

By the Commission.

[SEAL] ORVAL L. DuBOIS,
Recording Secretary.

[F. R. Doc. 40-5547; Filed, December 12, 1940;
11:11 a. m.]

[File No. 70-203]

IN THE MATTER OF COLUMBIA GAS & ELECTRIC CORPORATION; THE CINCINNATI GAS & ELECTRIC COMPANY; THE HAMILTON SERVICE COMPANY; THE HARRISON ELECTRIC AND WATER COMPANY; THE LOVELAND LIGHT AND WATER COMPANY

NOTICE REGARDING FILING

At a regular session of the Securities and Exchange Commission, held at its office in the City of Washington, D. C., on the 11th day of December, A. D. 1940.

Notice is hereby given that a declaration or application (or both), has been filed with this Commission pursuant to the Public Utility Holding Company Act of 1935 by the above-named party or parties; and

Notice is further given that any interested person may, not later than December 27, 1940, at 4:30 P. M., E. S. T., or 1:00 P. M., E. S. T., if such date be a Saturday, request the Commission in writing that a hearing be held on such matter, stating the reasons for such request and the nature of his interest, or may request that he be notified if the Commission should order a hearing thereon. At any time thereafter such declaration or application, as filed or as amended, may become effective or may be granted, as provided in Rule U-8 of the Rules and Regulations promulgated pursuant to said Act. Any such request should be addressed: Secretary, Securities and Exchange Commission, Washington, D. C.

All interested persons are referred to said declaration or application, which is on file in the office of said Commission, for a statement of the transactions therein proposed, which are summarized below:

The Hamilton Service Company, The Harrison Electric and Water Company, The Loveland Light and Water Company

and The Cincinnati Gas & Electric Company are subsidiaries of Columbia Gas & Electric Corporation, a registered holding company and subsidiary of The United Corporation, a registered holding company (the companies being herein-after referred to as "Hamilton", "Harrison", "Loveland", "Cincinnati", and "Columbia"). The matter concerned herewith relates to a general program involving the merger of Hamilton, Harrison and Loveland with Cincinnati, and other necessary or incidental steps connected therewith which are briefly outlined as follows:

(1) Hamilton, Harrison and Loveland, severally, will issue and sell shares of common stock to Columbia for cash, the proceeds being applied to the payment of demand indebtedness of each company, all of which debt is owing to Columbia;

(2) Columbia will surrender indebtedness of Hamilton in an amount sufficient to enable Hamilton to create capital surplus against which it may charge the deficit in its earned surplus since December 31, 1937;

(3) Columbia will have a new Indiana corporation organized and will purchase for cash its entire capital stock; the new company acquiring the Indiana properties of Harrison with the proceeds of the sale (\$20,000 or less);

(4) Harrison and Loveland will declare and pay dividends in the amount of their respective earned surpluses since December 31, 1937;

(5) Cincinnati will increase its authorized common stock and amend the articles of incorporation to permit it to engage in the water business;

(6) Hamilton, Harrison and Loveland will be merged into Cincinnati pursuant to the provisions of the Ohio General Corporation Law with Cincinnati continuing as the surviving corporation; Cincinnati acquiring (by the merger) all of the assets of Hamilton, Harrison and Loveland and assuming by operation of law all of their liabilities, which will consist of current obligations only; in the merger Cincinnati will issue and deliver 21,635 shares of its common stock to Columbia in exchange for all of the common stocks of Hamilton, Harrison and Loveland.

Applicants and declarants state that the proposed transactions will result in a reduction of operating costs, in corporate simplification, and in other corporate advantages.

Sections 6 (b), 7, 9 (a) and 10 of the Public Utility Holding Company Act of 1935 and Rules U-12B-1, U-12D-1, U-12F-1 and Instruction 8 (c) of the Uniform System of Accounts promulgated under the Act are designated as applicable to the proposed transactions.

By the Commission.

[SEAL] ORVAL L. DuBOIS,
Recording Secretary.

[F. R. Doc. 40-5546; Filed, December 12, 1940;
11:11 a. m.]

[File No. 70-211]

IN THE MATTER OF EAST TENNESSEE LIGHT
& POWER COMPANY

NOTICE REGARDING FILING

At a regular session of the Securities and Exchange Commission, held at its office in the City of Washington, D. C., on the 11th day of December, A. D. 1940.

Notice is hereby given that an application and declaration have been filed with this Commission pursuant to the Public Utility Holding Company Act of 1935 by the above named party; and

Notice is further given that any interested person may, not later than December 26, 1940, at 4:30 P. M. E. S. T., request the Commission in writing that a hearing be held on such matter, stating the reasons for such request and the nature of his interest, or may request that he be notified if the Commission should order a hearing thereon. At any time thereafter such application and declaration, as filed or as amended, may become effective or may be granted as provided in Rule U-8 of the Rules and Regulations promulgated pursuant to said Act. Any such request should be addressed: Secretary, Securities and Exchange Commission, Washington, D. C.;

All interested persons are referred to said declaration and application which are on file in the office of said Commission for a statement of the transactions

therein proposed, which are summarized below:

East Tennessee Light & Power Company proposes to issue and sell \$5,000,000 principal amount of its First Mortgage Bonds, Series A, due 1966, bearing interest at the rate of 3½% per annum and \$1,000,000 principal amount of its 3½% Sinking Fund Debentures due 1956. Such securities are to be sold to John Hancock Mutual Life Insurance Company, pursuant to a contract dated December 3, 1940, in a transaction not involving a public offering, at a price equal to the principal amount of such new securities plus accrued interest to the date of purchase.

The proceeds of sale of said new securities will be applied to the redemption and retirement of the Secured Note and all the outstanding bonds of the Company and of predecessor companies, which bonds and Secured Note are as follows:

	Outstanding October 31, 1940
East Tennessee Light & Power Company:	
First Mortgage and Refunding Bonds:	
5½% Series, due 1954-----	\$1,950,000
5% Series, of 1939-----	271,000
3¾% Series due 1943 (\$481,000 authenticated bonds pledged under 3¾% Secured Note)-----	
3¾% Secured Note (due July 1, 1942)-----	441,000

	Outstanding October 31, 1940
Tennessee Eastern Electric Company:	
First Mortgage Five Per Cent Thirty year Gold Bonds (due February 1, 1943)-----	1,952,500
Refunding Mortgage Gold Bonds, Series A 6% due 1955-----	691,000
Refunding Mortgage Bonds, Series B 5% due 1958-----	484,000
Watauga Power Company:	
First Mortgage 6% Sinking Fund Gold Bonds (due De- cember 1, 1952), excluding \$154,000 held alive in sink- ing fund-----	146,000
Total-----	5,935,500

¹ Cities Service Power & Light Company owns the entire issue of these bonds.

The Company proposes to acquire from Cities Service Power & Light Company all the above bonds owned by the latter company, aggregating \$2,705,000 principal amount, at \$2,546,075 (exclusive of interest), their carrying value on the books of the latter as of October 31, 1940, which is \$260,860 less than the aggregate redemption price thereof.

By the Commission.

[SEAL]

ORVAL L. DuBOIS,
Recording Secretary.

[F. R. Doc. 40-5549; Filed, December 12, 1940;
11:12 a. m.]

